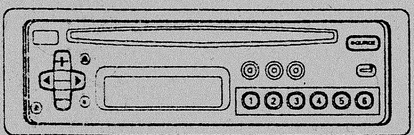
PIONEER
The Art of Entertainment

Service Manual

·DEH-505/UC



ORDER NO.
CRT1570

The chapter 1 of this Service Manual will not be reprinted. On your additional orders, we may supply only the chapter 2. For the chapter 1, please make copies and attach to the chapter 2 at your side if necessary.

HIGH POWER CD PLAYER WITH FM/AM TUNER

DEH-505 UC
DEH-503 ES
DEH-45 UC
DEH-405 UC
DEH-305 US
DEH-303 ES
DEH-205 UC
DEH-203 ES

- **See the service manual CX-540 (CRT1574) for the CD mechanism description, disassembly and circuit description.**
- **The CD mechanism employed in this model is one of CX-540 series.**

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CHAPTER 1

● **CD Player Service Precautions**

1. For pickup unit(CGY1031) handling, please refer to"Disassembly" (CX-540 Service Manual).During replacement, handling precautions shall be taken to prevent an electrostaticdischarge(protection by a short pin).
2. During disassembly, be sure to turn the power off since an internal IC might be destroyed when a connector is plugged or unplugged.

SAFETY INFORMATION (UC, US MODEL)

CAUTION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely; you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5). When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

1. SPECIFICATIONS

General

Power source	14.4 V DC (10.8 — 15.6 V allowable)
Grounding system	Negative type
Max. current consumption	6 A
Dimensions (chassis)	178 (W) × 50 (H) × 155 (D) mm [7 (W) × 2 (H) × 6-1/8 (D) in.]
(nose)	170 (W) × 48 (H) × 15 (D) mm [6-3/4 (W) × 1-7/8 (H) × 5/8 (D) in.]
Weight	1.5 kg (3.3 lbs)

Amplifier

Continuous power output is 10 W per channel min. into 4 ohms, both channels driven 50 to 15,000 Hz with no more than 5% THD.

Max. power output	22 W × 4 (EIAJ)
Load impedance	4Ω (4 — 8Ω allowable)
Preout output level/ output impedance	500 mV/1 kΩ
Tone controls (bass)	±10 dB (100 Hz)
(treble)	±10 dB (10 kHz)
Loudness contour	+10 dB (100 Hz), +7 dB (10 kHz) (volume: –30 dB)

CD player

System	Compact disc audio system
Usable discs	Compact disc
Signal format	Sampling frequency: 44.1 kHz Number of quantization bits: 16; linear
Frequency characteristics	5 — 20,000 Hz (±1 dB)
Signal-to-noise ratio	94 dB (1 kHz) (IHF-A network)
Dynamic range	90 dB (1 kHz)
Number of channels	2 (stereo)

FM tuner

Frequency range(UC, US)	87.9 — 107.9 MHz
Frequency range(ES)	87.5 — 108.0 MHz
Usable sensitivity	11 dBf (1.0µV/75Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity	16 dBf (1.7µV/75Ω, mono)
Signal-to-noise ratio	70 dB (IHF-A network)
Distortion	0.3% (at 65 dBf, 1 kHz, stereo)
Frequency response	30 — 15,000 Hz (±3 dB)
Stereo separation	40 dB (at 65 dBf, 1 kHz)
Selectivity	70 dB (2ACA) (±400 kHz)
Three-signal intermodulation (desire signal level)	50 dBf (two undesire signal level: 110 dBf)

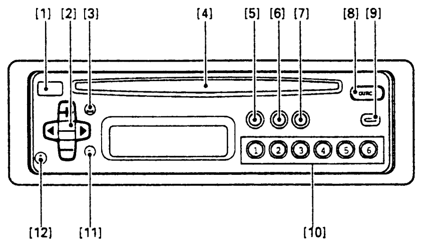
AM tuner

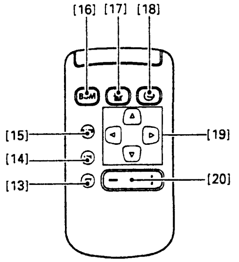
Frequency range(UC, US, ES)(10KHz)	530 — 1,710 kHz
Frequency range(ES)(9KHz)	531 — 1602 KHz
Usable sensitivity	18µV (25 dB) (S/N: 20 dB)
Selectivity	50 dB (±10 kHz)

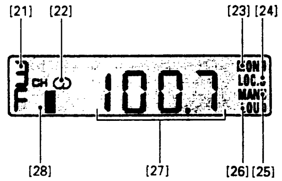
These specifications were determined and are presented in accordance with specification standards established by the Ad Hoc Committee of Car Stereo Manufacturers.

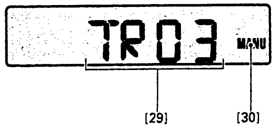
Note:
Specifications and the design are subject to possible modification without notice due to improvements.

2. OPERATION AND CONNECTION









Connecting the Units

Note:

- This unit is for vehicles with a 12-volt battery and negative grounding. Before installing it in a recreational vehicle, truck, or bus, check the battery voltage.
- To avoid shorts in the electrical system, be sure to disconnect the battery ⊖ cable before beginning installation.
- After completing installation and wiring, double check that there are no mistakes. Re-install any parts removed from the car during installation, then connect the battery negative terminal.
- Refer to the owner's manual for details on connecting the various cords of the power amp and other units, them make connections correctly.
- Secure the wiring with cable clamps or adhesive tape. To protect the wiring, wrap adhesive tape around them where they lie against metal parts.
- Route and secure all wiring so it cannot touch any moving parts, such as the gear shift, handbrake, and seat rails. Do not route wiring in places that get hot, such as near the heater outlet. If the insulation of the wiring melts or gets torn, there is a danger of the wiring short-circuiting to the vehicle body.
- Don't pass the orange lead through a hole into the engine compartment to connect to the battery. This will damage the lead insulation and cause a very dangerous short.
- Do not shorten any leads. If you do, the protection circuit may fail to work when it should.
- Never feed power to other equipment by cutting the insulation of the power supply lead of the unit and tapping into the lead. The current capacity of the lead will be exceeded, causing over heating.
- When replacing fuses, be sure to use only fuses of the rating prescribed on the fuse holder.
- Since a unique BPTL circuit is employed, never wire so the speaker leads are directly grounded or the left and right speaker ⊖ leads are common.
- Speakers connected to this unit must be high-power type possessing maximum input of at least 22 W and impedance of 4 to 8 ohms. Connecting speakers with output and/or impedance values other than those noted here can damage the speakers.

- When the power amp is being linked with this system, be sure not to connect the blue lead to the amp's power terminal. Likewise, when linking this system with the auto-antenna, do not connect to power terminal for the antenna. Such connection can make overcurrent cause malfunctions.
- When the unit is mounted in a vehicle whose ignition switch does not have the ACC (accessory) position as shown in Fig. 2, be sure to connect the red lead of the unit to the terminal controlled by the ignition switch ON/OFF position. If you do not, the vehicle battery may go flat when you leave your vehicle for several hours. (Fig. 1: ACC position/Fig. 2: No ACC position)

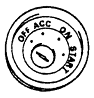


Fig. 1

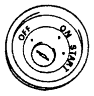


Fig. 2

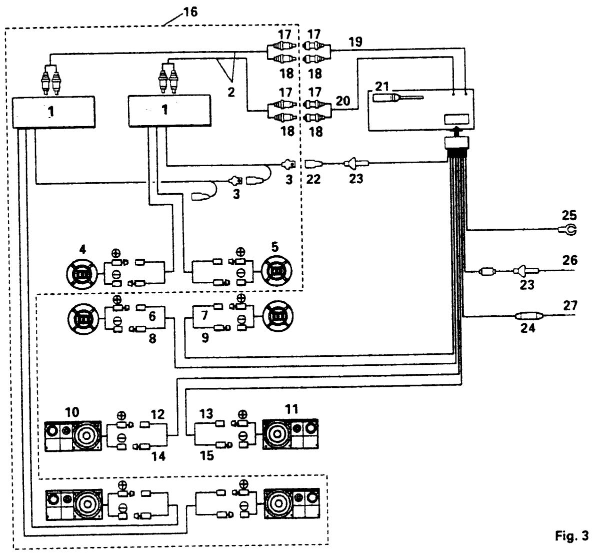


Fig. 3

Connection Diagram (Fig. 3)

1. Power amp (sold separately)
2. Connecting cords with RCA pin plugs (sold separately)
3. Blue
4. Front/left speaker
5. Front/right speaker
6. Green
7. Gray
8. Green/black
9. Gray/black
10. Rear/left speaker
11. Rear/right speaker
12. Green/red
13. Gray/red
14. Black/green
15. Black/gray
16. Connected only when the optional amplifier is used. Nothing is connected when operating the built-in amplifier itself.
17. White
18. Red
19. Rear out
20. Front out (DEH-405, DEH-305, DEH-303, DEH-205, DEH-203 do not have this terminal.)
21. Antenna jack
22. Blue
    To system control terminal of the power amp or Auto-antenna relay control terminal (Max. 300 mA 12 V DC).
23. Fuse holder
24. Fuse resistor
25. Black (ground)
    To vehicle (metal) body.
26. Orange
    To terminal always supplied with power regardless of ignition switch position.
27. Red
    To electric terminal controlled by ignition switch (12 V DC) ON/OFF.

Changing the Source

Parts Identification

[8] Source

Changing the Source

Each time the button [8] is pressed, the source will change in the following sequence:
Built-in CD player → Tuner → OFF

- If there is no disc in the built-in CD player, the source will not change to "built-in CD player".

Adjusting the Audio

Parts Identification

[2] Volume/Audio adjustment
[11] Shift
[13] Attenuator
[26] Loudness

Mode Selection

Each press of button [11] changes the mode as follows:
Volume adjustment (V) → Balance adjustment (F/B) → Tone adjustment (BS/TR) → Loudness adjustment (LOUd)

- When you're adjusting fader, balance, bass or treble, the indicator will stop at the center setting. About 8 seconds after adjustment, the display returns to its previous state.

Volume Adjustment

Pressing the (+) side of button [2] increases the volume, while the (–) side decreases it. (Display shows "V-00" ~ "V-30".)

- When driving your vehicle, be sure to keep the volume of the unit set low enough to allow you to hear sounds coming from outside.

Balance Adjustment

Press button [11] to select balance adjustment mode. ("F" appears on the display.) Adjust the fader using the (+) or (–) side of button [2]. To adjust the balance, press either the (◀) or (▶) side of button [2] to turn on B.

Fader

Press the (+) side of button [2] to raise the volume of the front speaker only. Press the (–) side of the button to raise the volume of the rear speaker only.
(Display shows "F-F9" ~ "F-R9".)

- Please set "F-0" when using 2 speaker system.

Balance

Pressing the (◀) side of button [2] shifts the balance to the left speaker, while the (▶) side shifts it to the right speaker.
(Display shows "B-L9" ~ "B-R9".)

Tone Adjustment

Press button [11] to select tone adjustment mode. ("BS" appears.) Select the tone you wish to adjust using the (◀) or (▶) side of button [2]. Each press of the (▶) side changes the tone from BS → TR, while each press of the (◀) side changes the tone from TR → BS.

Bass Adjustment

Select the Bass mode.
Pressing the (+) side of button [2] increases bass, while the (–) side decreases bass.
(Display shows "BS -6" ~ "BS 6".)

Treble Adjustment

Select Treble adjustment mode.
Pressing the (+) side of button [2] increases treble, while the (–) side decreases treble.
(Display shows "TR -6" ~ "TR 6".)

Loudness Adjustment

This "loudness" function enhances both the high and low ranges of sound to give even more power to output even at low volume.
Press button [11] to select loudness adjustment mode. (The "LOUd" indicator appears on the display.)
Pressing the (▶) side of button [2] turns the loudness function on (LOUD [26] light up), pressing the (◀) side turns it off.

Attenuator

- *DEH-45, DEH-405, DEH-305, DEH-303, DEH-205,DEH-203 do not have this function.*

The volume will be reduced to about 1/10.
Press button [13]. ("V-12" will blink.) To cancel, press the button again.

Using the Tuner

Parts Identification

[2] Tuning
    Seek/Manual
    Local Seek Sensitivity
[5] Local mode
[6] BSM/Preset Scan
[7] FM Monaural
[8] Source
[9] Band
[10] Preset
[21] Preset Number
[22] FM Stereo
[23] FM Monaural
[24] Local mode
[25] Manual
[27] Frequency
[28] Band

Electronic Tuner

Frequency allocation differs depending upon the area. This unit has been designed in accordance with the frequency allocations for North America. Use in other areas will result in improper reception.

Listening to the Radio

1. Set the source to "tuner" by pressing button [8].
   - For details, refer to "Changing the Source".
2. Select the band by pressing button [9]. Each time the button is pressed, the band will change in the following sequence: FⅠ(FM1) → FⅡ(FM2) → FⅢ(FM3) → A(AM)
3. Use seek tuning or manual tuning to tune to a radio station.

3-1. Set the tuning mode to "seek" or "manual" by pressing the (◀) and (▶) sides of button [2] simultaneously. Repeat this operation to switch to the other tuning mode. (When the manual tuning mode is set, "MANU" [25] will be displayed.)

3-2. Tune by Press (◀) or (▶) of button [2]. (When there is a stereo broadcast, "ↀ" [22] will be displayed.)

Seek Tuning:
When the button is pressed, stations whose signal strength is above a certain level will be tuned automatically.

Manual Tuning:
When the button is pressed, the frequency will change by one step up or down.

Using the Preset Memory

The radio stations can be stored in memory under buttons 1 to 6 of [10].

1. Tune in to the station to be stored in memory.
2. Store the station in memory by pressing one of the buttons (1 to 6) for at least 2 seconds. When the [21] number stops blinking, the station will be stored in memory under the button pressed.
   - Up to 18 FM stations and 6 AM stations can be stored in memory.

Preset Tuning

The radio stations stored in memory can be recalled by pressing the respective button 1 to 6 of [10]. The station stored under that button will be recalled. (The number of the button pressed will be displayed at [21].)

Using the Best Stations Memory (BSM)

The radio stations having a strong signal can be tuned automatically and stored in memory under buttons 1 to 6 [10]. Press button [6] for at least 2 seconds. (The "----" will blink.) After "----" stops blinking, the stations will be stored in memory under buttons 1 to 6 of [10].

- BSM can be canceled mid-operation by pressing button [6].
- The stations will be stored under buttons 1 to 6 in the order of their signal strength. The strongest station will be stored under button 1, followed by stations with lower signal strengths.
- If there are fewer than 6 stations whose signal is strong, there will be spare memory.
- It will take almost 30 seconds for BSM to be completed.

Preset Scan Tuning

This recalls in sequence all the stations stored in memory under the buttons [10] for 8 seconds each. Press button [6]. (The [21] number will blink.) To cancel, press the button again. After the desired station is tuned, cancel the preset scan tuning. The station will then continue to be received.

- Stations stored in memory under the buttons [10] but whose signal is weak will not be recalled.

Local Seek Tuning

When the local mode is set, the seek tuning's sensitivity level will become high and only stations with a strong signal will be seek tuned. The local mode's seek sensitivity can be adjusted.

Setting the Local Mode

Press button [5]. (The "LOC.S" [24] will light.) To cancel the local mode, press the button again.

Adjusting the Local Seek Sensitivity

There are 4 local seek sensitivity steps for FM and 2 steps for AM.

- LOC-4 is the highest seek tuning sensitivity level. Only the stations with a strong signal are tuned. LOC-3, LOC-2, and LOC-1 in descending order enables the tuning of stations with a respectively weaker signal.

1. Set to local seek sensitivity adjustment mode. Press button [5] for at least 2 seconds. (The current sensitivity level "LOC2" will be displayed.)
   - The local seek sensitivity adjustment mode will be canceled after about 5 seconds.
2. Adjust the sensitivity level by pressing (◀) or (▶) of button [2].

FM Monaural Reception

If a stereo broadcast has a lot of noise, switching to the monaural reception mode will reduce the noise. Press button [7]. ("MONO" [23] will appear on the display.) To cancel, press the button again.

Playing Compact Discs

Parts Identification

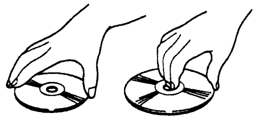
[2] Track Number Search
 Fast Forward and Reverse
[3] Eject
[4] Disc Insertion Slot
[8] Source
[10] ① Pause
 ② Repeat
 ③ Random play
[29] Track number
[30] Manual

Discs

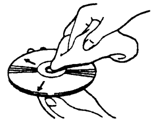
- Only use compact discs (optical digital audio discs) bearing the mark shown below.

COMPACT
disc
DIGITAL AUDIO

- Do not use cracked, scratched, or warped discs.
- Do not touch the disc's playing side. Handle the disc as shown below.



- Do not affix any label on the disc.
- Do not apply any vinyl record spray, anti-static agent, benzene, paint thinner, or any other volatile chemicals.
- Do not play a dirty disc. Use a soft cloth to clean a dirty disc as shown below. Wipe the disc outward from the center.



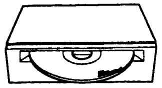
- Do not place the disc in high temperatures and direct sunlight.
- Be sure to store the disc in its case.

CD Playing Environment

- Disc playback may be interrupted by sudden road shock.
- When the air temperature is low and the car heater is turned on, condensation on the disc and internal parts of the unit may prevent proper playback operation. If this happens, turn off the unit and wait one hour until the condensation is gone. Also, use a soft cloth to wipe off any condensation from the disc.

Listening to the CD Player

1. With the label side up, insert a disc into [4]. Playback will start. (The track number [29] will be displayed.)
   - *Do not insert the disc with the label side down. Doing so may scratch the disc.*
   - If the disc stops midway while it is being inserted or if there is no playback after a disc is inserted, something may be wrong with the disc. Eject the disc and check it.
2. Turn ON/OFF the disc playback. Press button [8] to change the source.
   - For details, refer to "Changing the Source".
3. Eject the disc by pressing button [3].
   - *Do not leave the disc halfway into the unit as shown below. Doing so may cause the disc to be bent or dropped.*



Using Track Number Search, Fast Forward and Reverse

1. Set the mode to "track number search " or "fast forward and reverse".
   Press the (◀) and (▶) sides of button [2] simultaneously. Each time this is repeated, the mode will switch between the track number search mode and fast forward and reverse mode. (When the fast forward and reverse mode is set, "MANU" [30] will light. Playback time is then indicated in [29] on the display.)
2. Execute a track number search or fast forward and reverse by pressing (◀) and (▶) of button [2].

- Playback sound can be heard during fast forward and reverse.

Pausing

The disc playback can be stopped temporarily by pressing ① of button [10]. (The "----" will be displayed.) To cancel the pause, press the button again.

Repeat

1. To repeat the music you are listening to, press button ② of [10] ("RPT" will appear on the display).
2. To cancel music repeat, press button ② of [10] to turn off "RPT".

Random Play

1. To play music randomly, press button ③ of [10] ("RDM" will appear on the display). Once the current track has been played, the microprocessor will randomly select the next and subsequent tracks.
2. To cancel random play, press button ③ of [10] to turn off "RDM".

- Since selections are played in random order, the same selection may be played twice in succession.

Error Display

If there is a problem with CD playback, an error code will be displayed.
(Ex.: "E-10")
If an error is displayed, refer to the table below to identify the problem. If the error is displayed even after corrective action is taken, contact your dealer or the nearest authorized PIONEER Service Station.

D: Display
C: Cause
T: Treatment

D: E-11, 12, 14, 17, 30
C: The disc is dirty.
T: Clean the disc.

D: E-11, 12, 17, 30
C: The disc is scratched.
T: Replace the disc.

D: E-11, 14, 17
C: The disc is inserted with the label side down.
T: Insert the disc with the label side up.

D: E-14
C: An unrecorded CD-R is being used.
T: Check the disc.

D: Display
C: Cause
T: Treatment

D: E-10, 11, 12,14, 17, 30, A0
C: Electrical or mechanical fault.
T: Turn off the car's ignition and turn it back on again. Or change the source to another one and then change it back to CD.

D: HHHH
C: The CD player's internal temperature is high.
T: Wait until the CD player's internal temperature goes down.

Additional Functions

Parts Identification

[8] Clock
[10] ① Hour
  ② Minute
  ③ Synchronization with a time announcement
[11] Illumination

Switching Illumination Color

- *DEH-305, DEH-303, DEH-205, DEH-203 does not have this function.*

The illumination color can be set to amber or green.
Press button [11] for at least 2 seconds.
Repeat this operation to switch between amber and green.

Using the Clock Display

Displaying the Time

Press button [8] for more than 2 seconds.
Press button [8] again for more than 2 seconds to release.

- The clock can be displayed only when the power is ON.
- When another operation is executed, the clock will turn off for about 25 seconds and then turn on again.

Adjusting the Hour

While pressing button [8], press button ① [10] to advance the hour by one hour.

- When the button is held down, the hour will change quickly.

Adjusting the Minute

While pressing button [8], press button ② [10] to advance the minute by one minute.

- When the button is held down, the minute will change quickly.
- After the minute is adjusted, the clock will start from 0 second when button [8] is released.

Set the time time using "Synchronization with a time announcement."

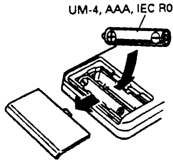
Pressing button ③ of [10] while holding down button [8] causes the time to display as ":00."

- When the minute display is in the range 00-29, the minute figure is restarted from zero. (Example: When the time is "10:18," it restarts from "10:00".)
- When the minute display is in the range 30-59, the hour figure is rounded up to restart the minutes. (Example: When the time is "10:36", it restarts from "11:00".)

Using the Remote Control

- *DEH-45, DEH-405, DEH-305, DEH-303, DEH-205, DEH-203 do not have this function.*

Loading Batteries



Precautions

- Do not place the remote control unit in high temperatures or in direct sunlight.
- Install the batteries in the proper direction.
- Use only UM-4, AAA, or IEC R03 1.5 V batteries.
- Do not mix old and new batteries.
- The batteries provided with the unit are not rechargeable. Therefore do not recharge them.
- If the remote control unit is not to be used for more than a month, remove the batteries.
- If there is battery leakage, wipe the leakage completely and install new batteries.

Note:

- Point the remote control at sensor [1] on the main unit.
  Otherwise, remote control operation may not be executed.
- When the main unit is in direct sunlight, remote control operation might not be possible.

Common Functions for Tuner and CD

[13] Attenuator

[14] Learn

Following the procedures below, the learn button on the remote controller can be used to perform the same operation as the button on the main unit.

1. Set to learn mode by pressing button [9] for at least 2 seconds. ("LRN" will be displayed.)
   - The learn mode will be canceled after about 8 seconds.
2. Press the button on the main unit that you want memorized on the remote controller.
   - Learn function cannot be used for button [12].

[20] Volume

Tuner Functions

[15] Band

[16] BSM

Hold down the button for at least two seconds to switch the BSM function ON and OFF.

[17] tuner power source

Press the button to switch the tuner power source ON and OFF.

[19] (◀) (▶) Seek tuning/Manual tuning

Press the buttons to select the station.
Press button [2] on the main unit to switch between seek tuning and manual tuning (see "Listening to the radio").
It is not possible to switch between seek and manual tuning using button [19].

[19] (▲) (▼) Preset Tuning

When this button is pressed, the stations stored under the button [10] will be recalled in sequence.

CD Functions

[18] CD power source

Press the button to turn the CD power source ON and OFF.

[19] (◀) (▶) Track Number Search

When this button is pressed, the track number will advance.

3. DISASSEMBLY

● Removing the Case

1.Remove the three screws.

2.Insert and turn a flat screwdriver at locations indicated by arrows to remove the case.

● Removing the Detach Grille Assy(Detachable Type)

1.Press the detach button, and then pull detach grille Assy.

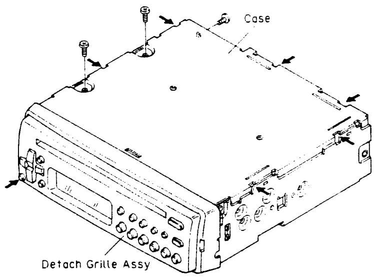

Case
Detach Grille Assy

Fig.4

● Removing the Panel Unit(Detachable Type)

1.Remove the screw B and disconnect the two stoppers indicated by arrows.

2.Disconnect the connector.

● Removing the CD Mechanism Module(Detachable Type)

1.Remove the four screws A.

2.Disconnect the connector.

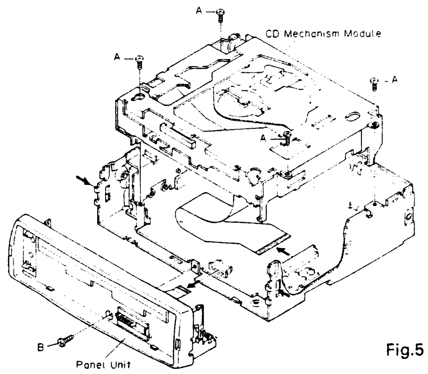

A
A
A
A
CD Mechanism Module
B
Panel Unit

Fig.5

● Removing the Grille Assy (Non Detachable Type)

1.Disconnect the two stoppers indicated by arrows.

2.Disconnect the connector.

● Removing the CD Mechanism Module(Non Detachable Type)

1.Remove the four screws.

2.Disconnect the connector.

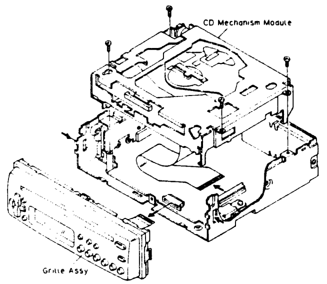

CD Mechanism Module
Grille Assy

Fig.6

● Removing the Chassis Unit

1.Remove the two screws C, screw D, and screw E.

2.Remove the screw F, and then remove the holder.

3.Stretch the four claws.

4.Remove the chassis Unit

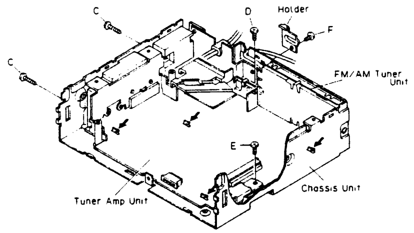
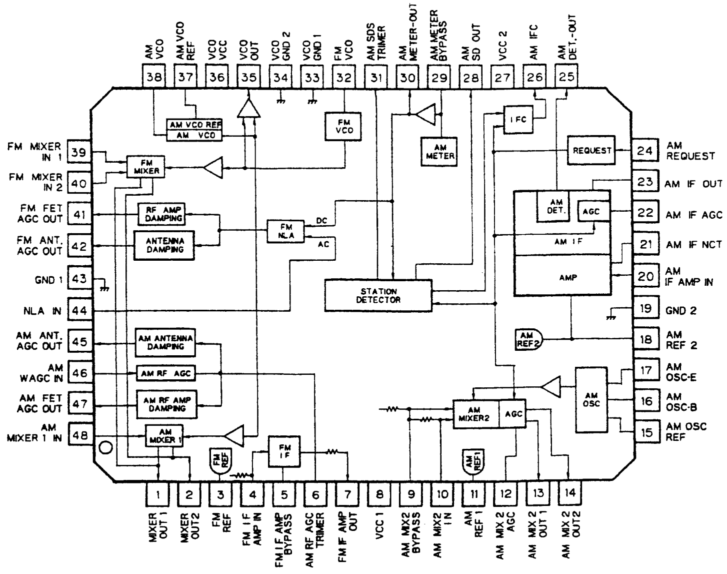

C
C
D
Holder
F
FM/AM Tuner Unit
E
Tuner Amp Unit
Chassis Unit

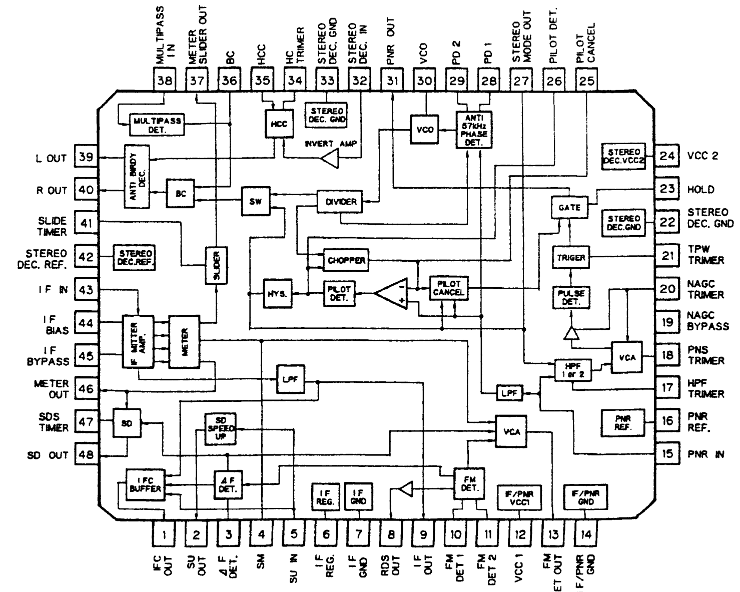
Fig.7

● ICs

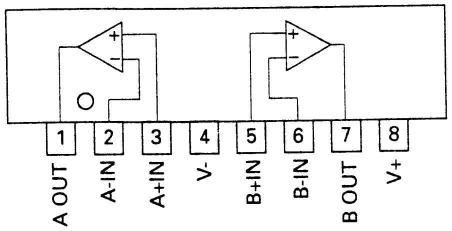
PA2021B


38 AM VCO
37 AM VCO REF
36 VCO VCC
35 VCO OUT
34 VCO GND 2
33 VCO GND 1
32 FM VCO
31 AM SDS TRIMER
30 AM METER-OUT
29 AM METER BYPASS
28 AM SD OUT
27 VCC 2
26 AM IFC
25 AM DET.-OUT
39 FM MIXER IN 1
40 FM MIXER IN 2
41 FM FET AGC OUT
42 FM ANT. AGC OUT
43 GND 1
44 NLA IN
45 AM ANT. AGC OUT
46 AM WAGC IN
47 AM FET AGC OUT
48 AM MIXER 1 IN
24 AM REQUEST
23 AM IF OUT
22 AM IF AGC
21 AM IF NCT
20 AM IF AMP IN
19 GND 2
18 AM REF 2
17 AM OSC-E
16 AM OSC-B
15 AM OSC REF
1 MIXER OUT 1
2 MIXER OUT2
3 FM REF
4 FM IF AMP IN
5 FM IF AMP BYPASS
6 AM RF AGC TRIMER
7 FM IF AMP OUT
8 VCC 1
9 AM MIX2 BYPASS
10 AM MIX2 IN
11 AM REF 1
12 AM MIX 2 AGC
13 AM MIX 2 OUT 1
14 AM MIX 2 OUT2
AM VCO REF
AM VCO
FM VCO
AM METER
IFC
REQUEST
FM MIXER
RF AMP DAMPING
ANTENNA DAMPING
FM NLA
DC
AC
STATION DETECTOR
AM DET.
AGC
AM IF
AMP
AM REF2
AM ANTENNA DAMPING
AM RF AGC
AM RF AMP DAMPING
AM MIXER 1
FM REF
FM IF
AM MIXER2
AGC
AM OSC
AM REF1

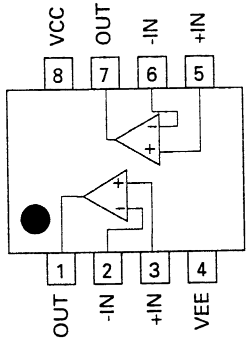
PA2022A


38 MULTIPASS IN
37 METER SLIDER OUT
36 BC
35 HCC
34 HC TRIMER
33 STEREO DEC. GND
32 STEREO DEC. IN
31 PNR OUT
30 VCO
29 PD 2
28 PD 1
27 STEREO MODE OUT
26 PILOT DET.
25 PILOT CANCEL
39 L OUT
40 R OUT
41 SLIDE TIMER
42 STEREO DEC. REF.
43 IF IN
44 IF BIAS
45 IF BYPASS
46 METER OUT
47 SDS TIMER
48 SD OUT
24 VCC 2
23 HOLD
22 STEREO DEC. GND
21 TPW TRIMER
20 NAGC TRIMER
19 NAGC BYPASS
18 PNS TRIMER
17 HPF TRIMER
16 PNR REF.
15 PNR IN
1 IFC OUT
2 SU OUT
3 AF DET.
4 SM
5 SU IN
6 IF REG.
7 IF GND
8 RDS OUT
9 IF OUT
10 FM DET 1
11 FM DET 2
12 VCC 1
13 FM DET OUT
14 IF/PNR GND
MULTIPASS DET.
HCC
STEREO DEC. GND
INVERT AMP
VCO
ANTI 57kHz PHASE DET.
STEREO DEC.VCC2
ANTI BIRDY DEC.
BC
SW
DIVIDER
GATE
STEREO DEC.GND
STEREO DEC.REF.
SLIDER
CHOPPER
TRIGER
HYS.
PILOT DET.
PILOT CANCEL
PULSE DET.
IF LIMITTER AMP.
METER
VCA
HPF 1 or 2
LPF
LPF
SD
SD SPEED UP
VCA
PNR REF.
IFC BUFFER
AF DET.
IF REG.
IF GND
FM DET.
IF/PNR VCC1
IF/PNR GND

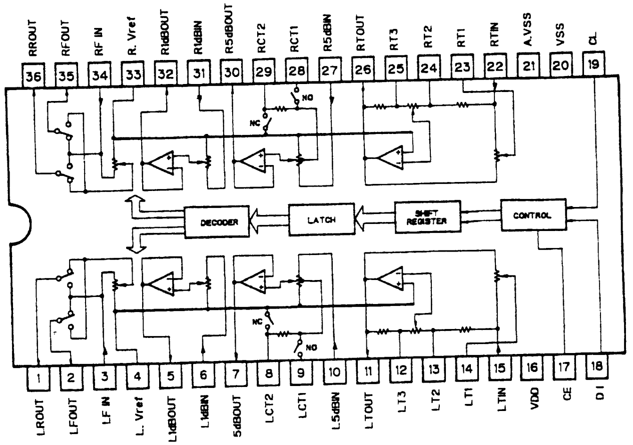
NJM4558L


1
2
3
4
5
6
7
8
A OUT
A-IN
A+IN
V-
B+IN
B-IN
B OUT
V+

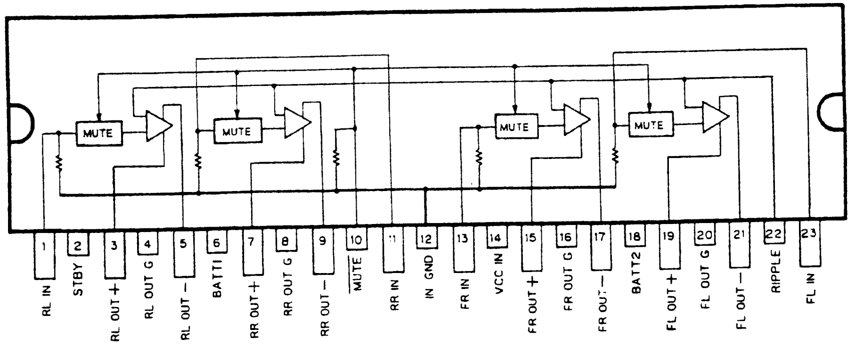
NJM4558MD


VCC
OUT
-IN
+IN
8
7
6
5
1
2
3
4
OUT
-IN
+IN
VEE

*LC7538JMHS


RROUT
RFOUT
RF IN
R. Vref
R1dBOUT
R1dBIN
R5dBOUT
RCT2
RCT1
R5dBIN
RTOUT
RT3
RT2
RT1
RTIN
A.VSS
VSS
CL
36
35
34
33
32
31
30
29
28
27
26
25
24
23
22
21
20
19
NO
NC
DECODER
LATCH
SHIFT REGISTER
CONTROL
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
LROUT
LFOUT
LF IN
L. Vref
L1dBOUT
L1dBIN
5dBOUT
LCT2
LCT1
L5dBIN
LTOUT
LT3
LT2
LT1
LTIN
VDD
CE
DI

PA3029A

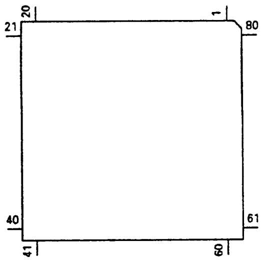

MUTE
MUTE
MUTE
MUTE
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
RL IN
STBY
RL OUT +
RL OUT G
RL OUT −
BATT1
RR OUT +
RR OUT G
RR OUT −
MUTE
RR IN
IN GND
FR IN
VCC IN
FR OUT +
FR OUT G
FR OUT −
BATT2
FL OUT +
FL OUT G
FL OUT −
RIPPLE
FL IN

● Pin Functions(PDR009B)

Pin No.	Pin Name	I/O	Output Format	Function and Operation
1–3	KD3–KD1	I		Analog key input
4	AVSS	I		A/D coverter GND
5,6	NC			Not used
7	AVREF1	I		D/A converter reference voltage
8	LCE	O		Chip enable output for LCD driver
9	LDT	O	C	Data output for LCD driver
10	$\overline{\text{RST}}$	O	C	LSI reset output
11,12	NC			Not used
13	SK	I		SK signal input
14	XA0	O		Control signal distinguishing data from microcomputer
15	$\overline{\text{XSTB}}$	O	C	LSI data output
16	XSI	I		LSI data input
17	XSO	O	C	LSI data output
18	$\overline{\text{XSCK}}$	O	C	LSI clock output
19	CONT	O	C	Servo driver power supply control
20	LOAD	O	C	Loading motor LOAD control
21	EJET	O	C	Loading motor EJECT control
22	CD5VON	O	C	CD +5V control
23	NC			Not used
24	CDMUTE	O	C	CD mute output
25	$\overline{\text{TMUTE}}$	O	C	Tuner mute output
26	VDCONT	O	C	VD control input
27	FOK	I		FOK signal input
28	MIRR	I		Mirror detector input
29	LOCK	I		Spindle lock detector input
30	CLAMP	I		Disc clamp sense input
31	$\overline{\text{HOME}}$	I	C	Home position detector input
32	FECNT	O	C	FE output control pin
33	VSS			GND
34	VDSENS	I		VD over voltage sense input
35	VMC	O	C	Loading motor driver power supply
36	NC			Not used
37	$\overline{\text{ADENA}}$	O	N	A/D converter reference voltage output
38	NC			Not used
39	CDPW	O	N	CD power control
40	LCK	O		Clock output for LCD driver
41	SYSPW	O	C	System power supply control output
42	BLGTA	O	C	LCD back light amber control output
43	BLGTG	O	C	LCD back light green control output
44	$\overline{\text{SWVDD}}$	O	C	Key board unit power supply control output
45	PEE	O	C	Beep tone output
46	VDT	O	C	Data output for electronic volume
47	VST	O	C	Strobe pulse output for electronic volume
48	VCK	O	C	Clock output for electronic volume
49	PCL	O	C	Clock adjustment output
50	FM/$\overline{\text{AM}}$	O	C	FM/AM power select output
51	MONO	O	C	Forced mono output
52-55	SIMK0–3	I		Model select input
56	MUTE	O	C	Mute output
57	NC			Not used
58	$\overline{\text{DK}}$	I		DK signal input
59	SD	I		SD input
60	$\overline{\text{RESET}}$	I		Reset input
61	$\overline{\text{REMIN}}$	I		Remote control signal input
62	$\overline{\text{BSENS}}$	I		Back up power sense input
63	$\overline{\text{ASENS}}$	I		ACC power sense input
64	PDI	I		PLL data input

Pin No.	Pin Name	I/O	Output Format	Function and Operation
65	PDO	O	C	Data output for PLL IC
66	PCK	O	C	Serial clock output for PLL IC
67	PCE	O	C	Chip enable output for PLL IC
68	VDD			Power supply
69,70	X2,X1			Crystal oscillator connection pin
71	IC			Connect to GND
72	XT2			Not used
73	TESTIN	I		Test program start input
74	AVDD			Positive power supply terminal for analog circuit
75	AVREF0	I		A/D converter reference voltage
76	SL	I		SD level input from tuner
77	TEMP	I		Temperature detector
78	DINC	I		Disc insert sense input
79	EJTD	I		Disc eject position sense input
80	KD0	I		Analog key input

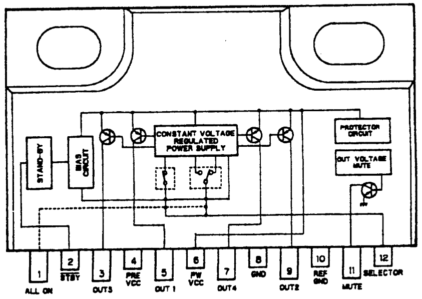
*PDR009B


20
1
21
80
40
61
41
60

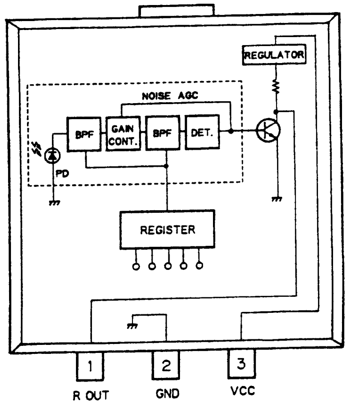
Output Format	Meaning
C	CMOS
N	N channel open drain

IC's marked by are MOS type.*
Be careful in handing them because they are very liable to be damaged by electrostatic induction.

PA2023A


STAND-BY
BIAS CIRCUIT
CONSTANT VOLTAGE REGULATED POWER SUPPLY
PROTECTOR CIRCUIT
OUT VOLTAGE MUTE
1
ALL ON
2
STBY
3
OUT3
4
PRE VCC
5
OUT 1
6
PW VCC
7
OUT4
8
GND
9
OUT2
10
REF GND
11
MUTE
12
SELECTOR

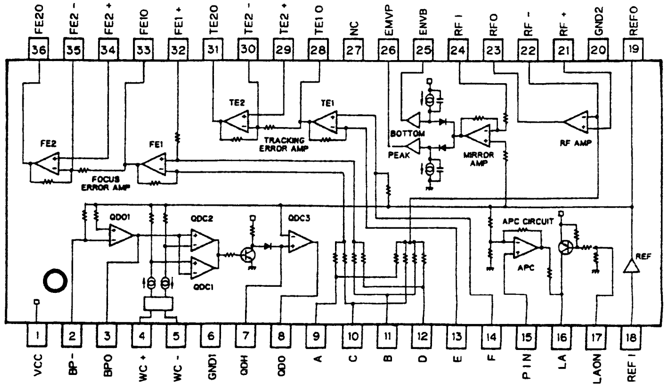
*RPM-678CBR


REGULATOR
NOISE AGC
BPF
GAIN CONT.
BPF
DET.
PD
REGISTER
1
2
3
R OUT
GND
VCC

● Pin Functions(UPC2571GS)

Pin No.	Pin Name	I/O	Function and Operation
1	VCC		VCC
2	BP-	I	TE zero cross amplifier input
3	BPO	O	TE zero cross amplifier output
4	WC+		Not used
5	WC-		Not used
6	GND1		GND
7	QDH		Not used
8	QDO		Not used
9	A	I	A signal input
10	C	I	C signal input
11	B	I	B signal input
12	D	I	D signal input
13	E	I	E signal input
14	F	I	F signal input
15	PIN	I	APC amplifier input
16	LA	O	APC amplifier output
17	LAON		APC amplifier ON/OFF switching
18	REFI	I	Reference voltage input
19	REFO	O	Reference voltage output
20	GND2		GND
21	RF+	I	RF amplifier non-inverting input
22	RF-	I	RF amplifier inverting input
23	RFO	O	RF amplifier output
24	RFI		Not used
25	ENVB		Not used
26	ENBP		Not used
27	NC		Non connection
28	TE1O	O	Tracking error amplifier 1 output
29	TE2+	I	Tracking error amplifier 2 non-inverting input
30	TE2-	I	Tracking error amplifier 2 inverting input
31	TE2O	O	Tracking error amplifier 2 output
32	FE1+	I	Focus error amplifier 1 non-inverting input
33	FE1O	O	Focus error amplifier 1 output
34	FE2+	I	Focus error amplifier 2 non-inverting input
35	FE2-	I	Focus error amplifier 2 inverter input
36	FE2O	O	Focus error amplifier 2 output

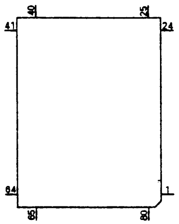
UPC2571GS


FE2O
FE2 -
FE2 +
FE1O
FE1 +
TE2O
TE2 -
TE2 +
TE1 O
NC
EMVP
ENVB
RF I
RFO
RF -
RF +
GND2
REFO
36
35
34
33
32
31
30
29
28
27
26
25
24
23
22
21
20
19
TE2
TE1
TRACKING ERROR AMP
BOTTOM
PEAK
MIRROR AMP
RF AMP
FE2
FE1
FOCUS ERROR AMP
QDO1
QDC2
QDC3
QDC1
APC CIRCUIT
APC
REF
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
VCC
BP -
BPO
WC +
WC -
GND1
QDH
QDO
A
C
B
D
E
F
P I N
LA
LAON
REF I

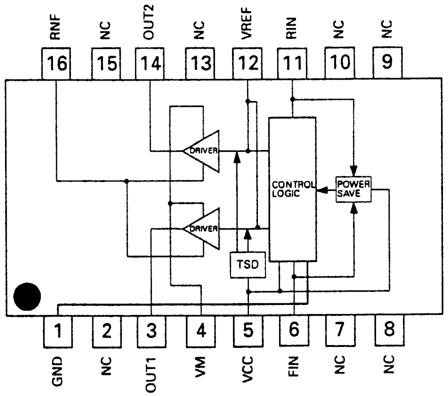
● Pin Functions(UPD63700GF)

Pin No.	Pin Name	I/O	Function and Operation
1	D.GND		Logic circuit GND
2	RFOK	O	RFOK detection signal output terminal
3	MIRR	O	MIRR detection signal output terminal
4	TBC	I	Tracking filter bank switching terminal
5	HOLD	I	Hold control signal input terminal
6	D.VDD		VDD for logic circuit
7	$\overline{\text{RST}}$	I	System reset
8	AO	I	Control signal distinguishing data from microcomputer
9	$\overline{\text{STB}}$	I	Signal latching serial data inside LSI
10	$\overline{\text{SCK}}$	I	Clock input terminal for serial data input and output
11	SO	O	Serial data and status signal output
12	SI	I	Serial data input
13	TM2	I	Double speed playback control terminal
14	D.GND		Logic circuit GND
15	TEST	I	Test terminal
16	STBY	I	Stand-by input terminal
17	CTLV	I	Control terminal for clock generation VCO used by digital PLL in double speed playback mode
18	POUT	O	Output terminal for phase comparison between EFM signal and bit clock
19	D.GND		Logic circuit GND
20	VCO	I	Inverter input
21	$\overline{\text{VCO}}$	O	Inverter output
22	D.VDD		VDD for logic circuit
23	PLCK	O	Bit clock monitor terminal
24	LOCK	O	"H" when synchronization signal and frame counter output coincide at EFM demodulator
25	WFCK	O	Signal issuring one-frame period by bit clock dividing signal
26	RFCK	O	Oscillation clock divider signal,output pin for signal giving 1-frame sync.
27	C4M	O	Output terminal for signal having four the frequency of LRCK
28	C16M	O	Oscillation clock output terminal
29	D.GND		Logic circuit GND
30	XTAL	I	Oscillation continuation terminal
31	$\overline{\text{XTAL}}$	O	Oscillation continuation terminal
32	D.VDD		VDD for logic circuit
33	SCKO	O	Clock output terminal for audio serial data
34	LRCK	O	Signal distinguishing between left and right channel DOUT terminal output
35	DOUT	O	Serial audio data output terminal
36	TX	O	Digital audio interface data output terminal
37	FLAG	O	Flag signal indicating that the current audio data output of incorrectable data
38	EMPH	O	Emphasis information output
39	WDCK	O	Output terminal for signal having double the frequency of LRCK
40	C2D3	O	Output terminal indicating C2 error correction status
41	SFSY	O	Signal indicating subcode one-frame synchronization
42	SBSY	O	Signal indicating head of subcode block
43	SBSO	O	Subcode data output terminal
44	SBCK	I	Subcode data read clock input terminal
45	D.GND		Logic circuit GND
46,47	C1D1,C1D2	O	Output terminal indicating C1 error correction status
48,49	C2D1,C2D2	O	Output terminal indicating C2 error correction status
50	T4	I	Selects between focus and tracking modulation mode
51	T5	I	Selects motor PWM output mode
52	T6	I	Sets focus PWM output mode
53	T7	I	Sets tracking PWM output mode
54	D.VDD		VDD for logic circuit
55	MRD	O	PWM negative output terminal for the spindle loop filter
56	MFD	O	PWM positive output terminal for the spindle loop filter
57	SRD	O	PWM negative output terminal for the thread loop filter
58	SFD	O	PWM positive output terminal for the thread loop filter
59	D.GND		Logic circuit GND
60	TRD	O	PWM negative output terminal for the tracking loop filter
61	TFD	O	PWM positive output terminal for the tracking loop filter
62	FRD	O	PWM negative output terminal for the focus loop filter
63	FFD	O	PWM positive output terminal for the focus loop filter
64	D.VDD		VDD for logic circuit
65	OUTSEL	I	Sets PWM output mode for the motor system
66	TEC1	I	Tracking error input terminal
67	TEC0	I	Tracking error input terminal
68	A.VDD		VDD for analog circuit
69,70	VR2,VR1	I	A/D converter input
71	TE	I	Tracking error input terminal
72	FE	I	Focus error input terminal
73	RFB	I	RFB signal input terminal
74	RFP	I	RFP signal input terminal
75	A.GND		Analog circuit GND
76	REFOUT	O	A/D converter midpoint voltage output terminal inside LSI
77	RFI	I	RF signal input terminal for EFM comparator
78	ASI	I	Level comparing input for RF signal comparison
79	EFM	O	EFM signal output terminal
80	A.VDD		VDD for analog circuit

*UPD63700GF



XRA6285FP



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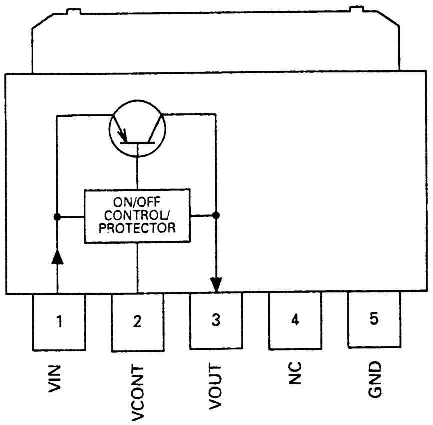

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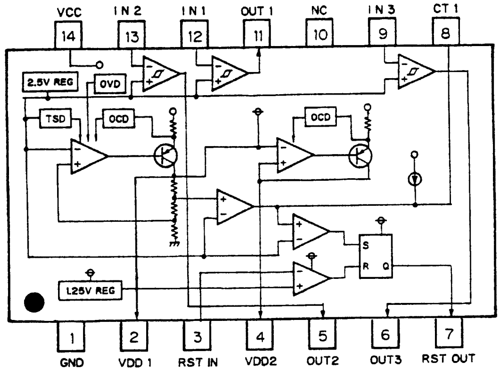
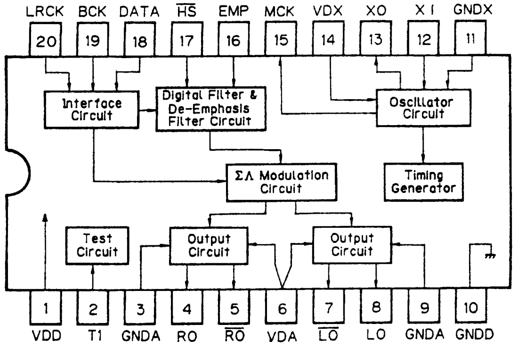
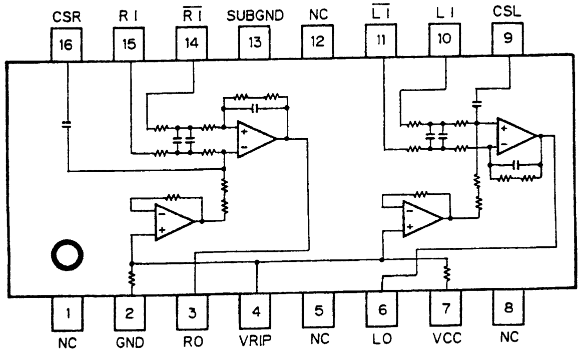

VCC
IN 2
IN 1
OUT 1
NC
IN 3
CT 1
14
13
12
11
10
9
8
2.5V REG
OVD
TSD
OCD
OCD
S
R
Q
1.25V REG
1
2
3
4
5
6
7
GND
VDD 1
RST IN
VDD2
OUT2
OUT3
RST OUT

*TC9268F


LRCK
BCK
DATA
HS
EMP
MCK
VDX
XO
X I
GNDX
20
19
18
17
16
15
14
13
12
11
Interface Circuit
Digital Filter & De-Emphasis Filter Circuit
Oscillator Circuit
ΣΛ Modulation Circuit
Timing Generator
Test Circuit
Output Circuit
Output Circuit
1
2
3
4
5
6
7
8
9
10
VDD
T1
GNDA
RO
RO
VDA
LO
LO
GNDA
GNDD

TA2063F


CSR
R I
R I
SUBGND
NC
L I
L I
CSL
16
15
14
13
12
11
10
9
1
2
3
4
5
6
7
8
NC
GND
RO
VRIP
NC
LO
VCC
NC

4. ADJUSTMENT

4.1 CD PLAYER SECTION

1)Precautions

- This unit uses a single power supply (+5V) for the regulator. The signal reference potential, therefore, is connected to REFO(approx. 2.5V) instead of GND.
  If REFO and GND are connected to each other by mistake during adjustments,not only will it be impossible to measure the potential correctly,but the servo will malfunction and a severe shock will be applied to the pick-up. To avoid this,take special note of the following.
  Do not connect the negative probe of the measuring equipment to REFO and GND together. It is especially important not to connect the channel 1 negative probe of the oscilloscope to REFO with the channel 2 negative probe connected to GND.
  Since the frame of the measuring instrument is usually at the same potential as the negative probe,change the frame of the measuring instrument to floating status.
  If by accident REFO comes in contact with GND,immediately switch the regulator or power OFF.

- Always make sure the regulator is OFF when connecting and disconnecting the various filters and wiring required for measurements.

- Before proceeding to further adjustments and measurements after switching regulator ON,let the player run for about one minute to allow the circuits to stabilize.

- Since the protective systems in the unit's software are rendered inoperative in test mode,be very careful to avoid mechanical and /or electrical shocks to the system when making adjustment.

- Test mode starting procedure
  Switch ACC,back-up ON while pressing the **4** and **6** keys together.

- Test mode cancellation
  Switch ACC,back-up OFF.

- Disc detection during loading and eject operations is performed by means of a photo transistor in this unit.Consequently,if the inside of the unit is exposed to a strong light source when the outer casing is removed for repairs or adjustment,the following malfunctions may occur.
  *During PLAY, even if the eject button is pressed,the disc will not be ejected and the unit will remain in the PLAY mode.
  *The unit will not load a disc.
  When the unit malfunctions this way,either re-position the light source,move the unit or cover the photo transistor.

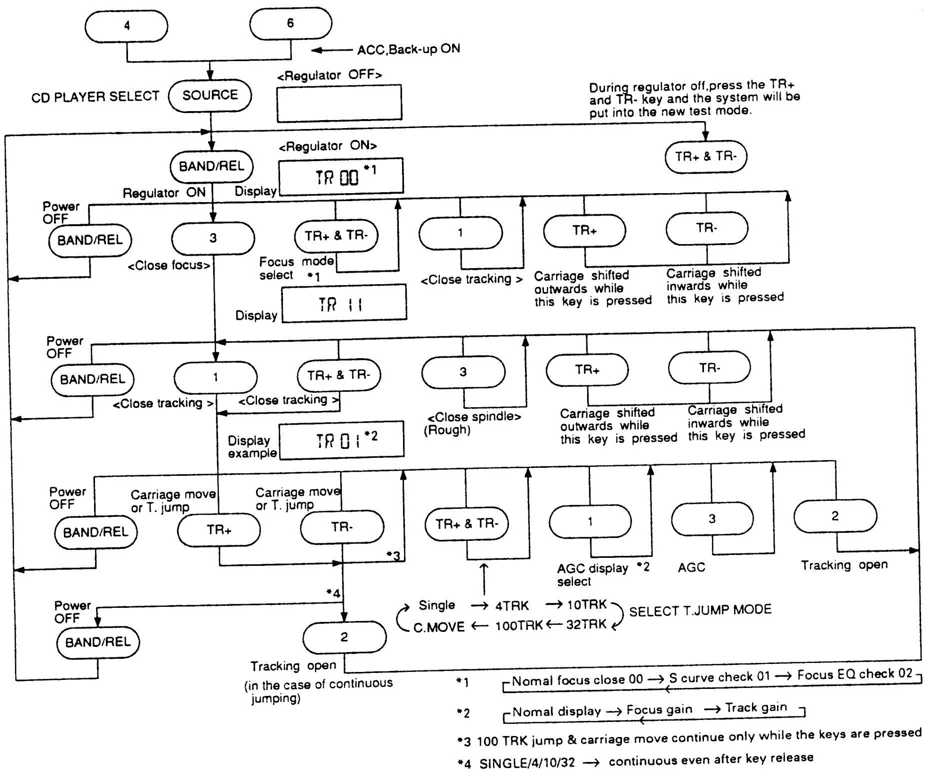
- When loading and unloading discs during adjustment procedures,always wait for the disc to be properly clamped or ejected before pressing another key. Otherwise, there is a risk of the actuator being destroyed.

- Turn power off when pressing the button **TR+** or the button **TR-** key for focus search in the test mode. (Or else lens may stick and the actuator may be damaged.)

- SINGLE/4TRK/10TRK/32TRK will continue to operate even after the key is released.Tracking is closed the moment C-MOVE is released.

- JUMP MODE resets to SINGLE as soon as power is switched off.

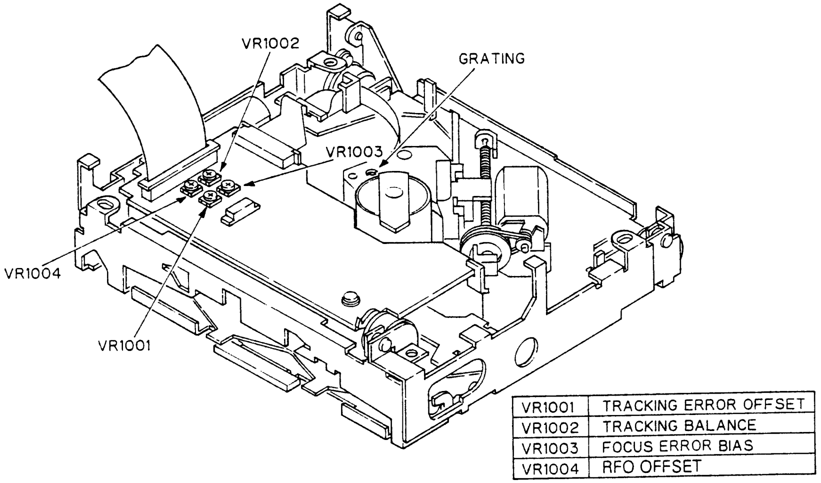
● Flow Chart


4
6
ACC,Back-up ON
<Regulator OFF>
CD PLAYER SELECT
SOURCE
During regulator off,press the TR+ and TR- key and the system will be put into the new test mode.
<Regulator ON>
BAND/REL
TR 00 *1
TR+ & TR-
Regulator ON
Display
Power OFF
BAND/REL
3
TR+ & TR-
1
TR+
TR-
<Close focus>
Focus mode select *1
<Close tracking >
Carriage shifted outwards while this key is pressed
Carriage shifted inwards while this key is pressed
Display
TR 11
Power OFF
BAND/REL
1
TR+ & TR-
3
TR+
TR-
<Close tracking >
<Close tracking >
<Close spindle> (Rough)
Carriage shifted outwards while this key is pressed
Carriage shifted inwards while this key is pressed
Display example
TR 01 *2
Power OFF
Carriage move or T. jump
Carriage move or T. jump
BAND/REL
TR+
TR-
TR+ & TR-
1
3
2
*3
AGC display *2 select
AGC
Tracking open
*4
Single → 4TRK → 10TRK
C.MOVE ← 100TRK ← 32TRK
SELECT T.JUMP MODE
Power OFF
BAND/REL
2
Tracking open
(in the case of continuous jumping)
*1 Nomal focus close 00 → S curve check 01 → Focus EQ check 02
*2 Nomal display → Focus gain → Track gain
*3 100 TRK jump & carriage move continue only while the keys are pressed
*4 SINGLE/4/10/32 → continuous even after key release

● Measuring Equipment and Jigs

Adjustment	Measuring equipment & jigs
1 Tracking Error Offset Adjustment 1	DC V Meter
2 Grating Check / Adjustment 1	Oscilloscope, ABEX TCD-784, L.P.F., Clock Driver
3 Grating Adjustment 2	Oscilloscope, Grating Adjustment Filter (B.P.F.), mV Meter, ABEX TCD-784, L.P.F., Clock Driver
4 Tracking Balance Adjustment 1	Oscilloscope, Low-pass Filter, ABEX TCD-784
5 Focus Bias Adjustment	Oscilloscope, ABEX TCD-784
6 RFO Offset Adjustment	Oscilloscope, ABEX TCD-784
7 Tracking Error Offset Adjustment 2	DC V Meter
8 Tracking Balance Adjustment 2	Oscilloscope, Low-pass Filter, ABEX TCD-784

● Adjustment Point


VR1002
GRATING
VR1003
VR1004
VR1001

VR1001	TRACKING ERROR OFFSET
VR1002	TRACKING BALANCE
VR1003	FOCUS ERROR BIAS
VR1004	RFO OFFSET

Fig.8

● Test Point

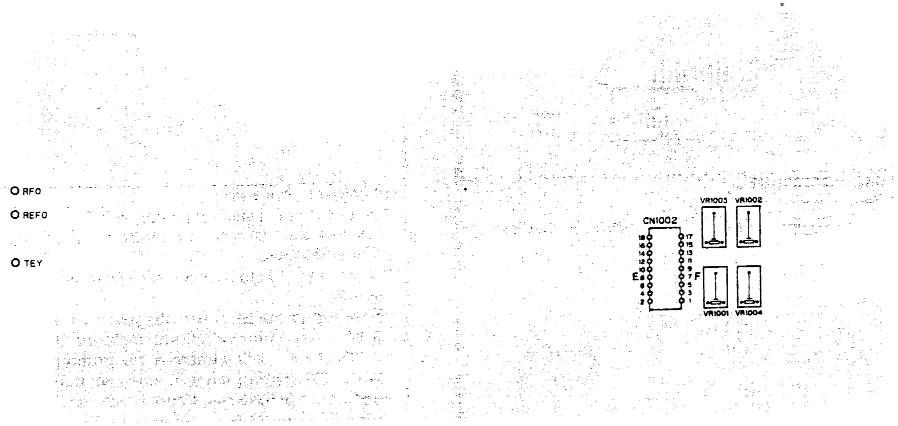

RFO
REFO
TEY
CN1002
VR1003
VR1002
VR1001
VR1004
E
F

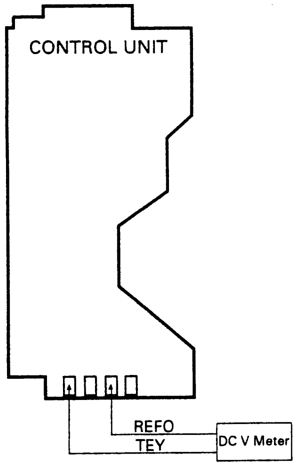
Fig.9

1 Tracking Error Offset Adjustment 1

·**Purpose :**
To adjust the offset of the tracking pre-amp to zero

·**Symptoms of Mal-adjustment :**
Track search NG, Carriage runaway, Poor playability

·**Measuring Equipment / Jig**	·DC V Meter
·**Measuring Point**	·TEY
·**Test Disc , Mode**	·No disc, TEST MODE
·**Adjustment Point**	·VR1001(TE OFFSET VR)



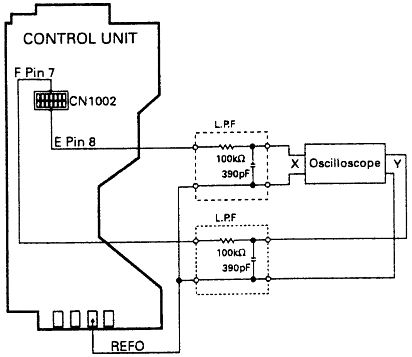
Adjustment Procedure
1.Switch the regulator on.
2.Using VR1001, adjust TEY to 0 ± 25mV w.r.t. REFO.

2 Grating Check / Adjustment 1

·**Purpose :**
To check that the PU grating is correctly aligned after the PU unit has been replaced

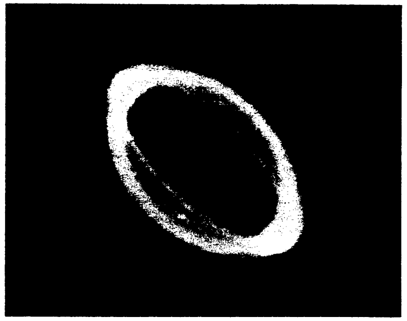
·**Symptoms of Mal-adjustment :**
Unable to play disc, track skip during search, search NG

·**Measuring Equipment / Jig**	·Oscilloscope, L.P.F., Clock Driver
·**Measuring Point**	·E, F
·**Test Disc , Mode**	·ABEX TCD-784, TEST MODE
·**Adjustment Point**	·Grating hole

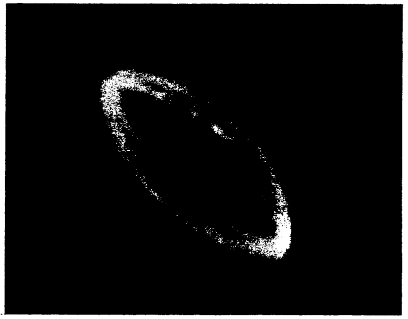


Adjustment Procedure
1.Load disc and switch regulator on.
2.Position the PU in the center of the disc using the **TR+** & **TR-** keys.
3.Press key **3** to close focus and once more to close spindle.
4.Refering to the photographs given check that the grating is within ±45°. If not, it should be possible to make a fine adjustment to the grating by **slowly** tuning the grating screw. If, however during the adjustment the lissajous figure is seen to "FLIP" then the null point must be found and the adjustment made from there(see next section).

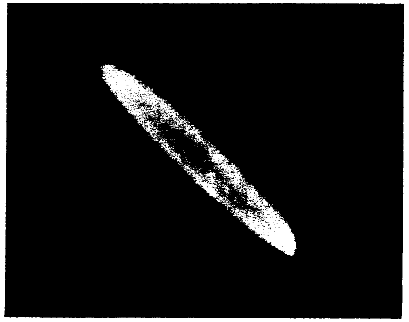
Lissajous figure (AC input)
Horizontal axis E 10mV/div.
Vertical axis F 10mV/div.


60°=NG

Waveform 1


45°=OK
(Limit)

Waveform 2


0°=BEST
(Doesn't become
a single line due
to eccentricity)

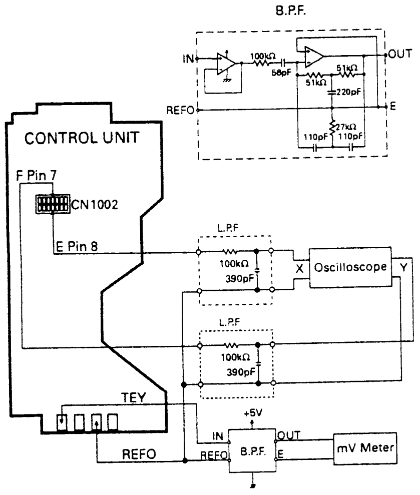
Waveform 3

3 Grating Adjustment 2

·Purpose :
This needs to be done if the previous adjustment was unsuccessful

·Symptoms of Mal-adjustment :
Unable to play disc, track skipping, track search NG

·Measuring Equipment / Jig	·Oscilloscope, Grating Adjustment filter (BPF), mV Meter, L.P.F. , Clock Driver
·Measuring Point	·TEY, E, F
·Test Disc , Mode	·ABEX TCD-784, TEST MODE
·Adjustment Point	·Grating hole

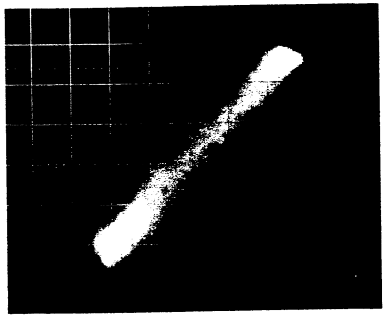


Adjustment Procedure

1.Load disc and switch regulator on.
2.Position PU unit in the center of the disc using the **TR+** & **TR-** keys.
3.Press key **3** to close focus and press once more to close spindle.
4.While monitoring the output of the BPF connected to TEY, slowly turn the grating screw. The output voltage should pass through many minimums; search for the minimum which is clearly smaller than the rest - this is the "null point", where the E & F subbeams are lined up with the tracks on the disc.
5.From this null point, turn the grating screw clockwise (as seen from the underside of the PU unit) until the lissajous waveform is a single line (or close as possible) as shown in the photograph.

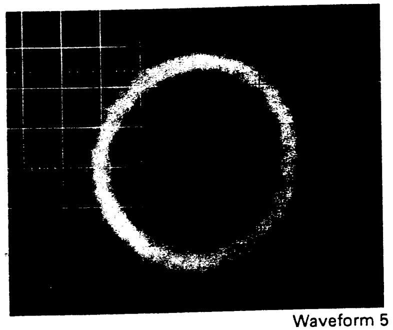
Null Point=180°

Lissajous figure (AC input)
Horizontal axis E 10mV/div.
Vertical axis F 10mV/div.



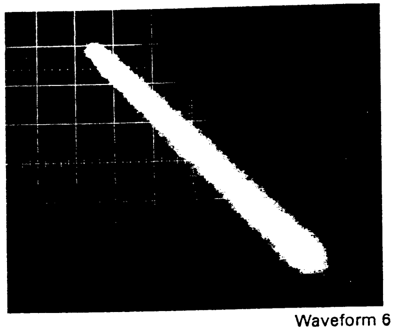
Waveform 4

"Rough" adjustment=90°



Waveform 5

Final adjustment=0°



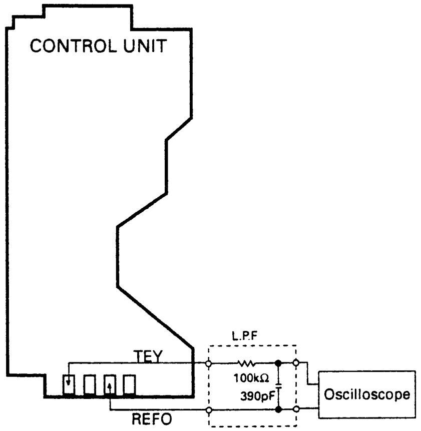
Waveform 6

4 Tracking Balance Adjustment 1

·Purpose :
To equate the sensitivity of the F channel to that of the E channel

·Symptoms of Mal-adjustment :
Track search NG, Poor playability carriage runaway

·Measuring Equipment / Jig	·Oscilloscope, L.P.F.
·Measuring Point	·TEY
·Test Disc , Mode	·ABEX TCD-784, TEST MODE
·Adjustment Point	·VR1002 (T.BAL VR)



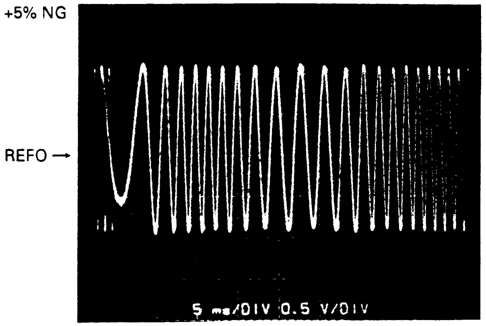
Adjustment Procedure

1.Load Disc and switch the regulator on.
2.Position the PU unit in the center of the disc using the **TR+** & **TR-** keys.
3.Close focus by pressing key **3**.
4.Observing the TEY waveform on the oscilloscope, adjust VR1002 until the positive and negative halves have the same amplitude (see waveform 7–9).

Check
After adjustment the TEY waveform should have an amplitude of 1.5±0.65 Vpp (ABEX-784)
(Providing focus bias is OK)

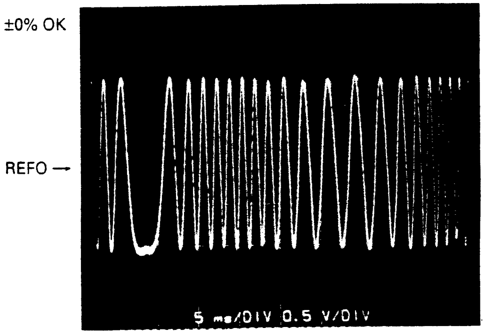
DC Mode
0.5V/div.
5ms/div.

+5% NG



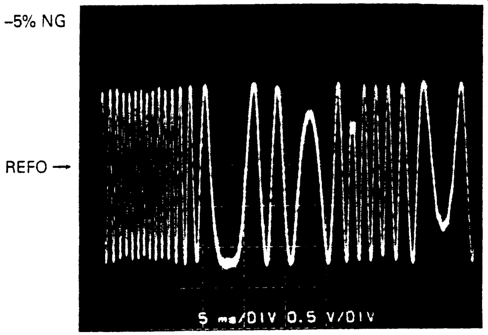
Waveform 7

±0% OK



Waveform 8

–5% NG



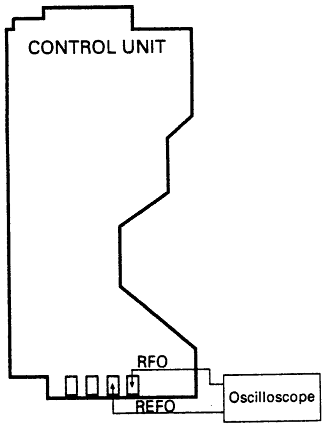
Waveform 9

5 Focus Bias Adjustment

·Purpose :
To adjust the focus servo reference so that the RF waveform is an optimum.

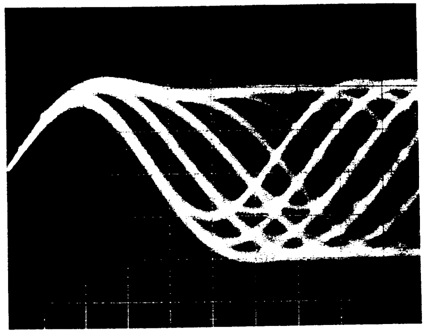
·Symptoms of Mal-adjustment :
Difficulty in closing focus, poor playability.

·Measuring Equipment / Jig	·Oscilloscope
·Measuring Point	·RFO
·Test Disc , Mode	·ABEX TCD-784, NORMAL MODE
·Adjustment Point	·VR1003 (FE BIAS VR)

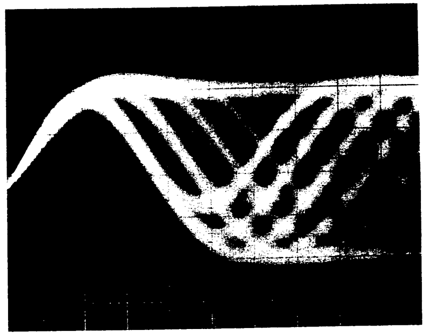


Adjustment Procedure
1) Play track number 18.
2) Adjust VR1003 so that the RFO waveform amplitude is a maximum and eye pattern is optimum.

Check
After adjustment the RFO waveform should have an amplitude of 1.7±0.65 Vpp (ABEX-784)


OK

Waveform 10


NG

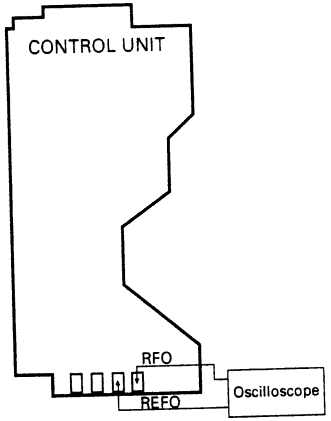
AC Mode Before adjustment Waveform 11

6 RFO Offset Adjustment

·Purpose
To adjust the RFO waveform offset to an optimum.

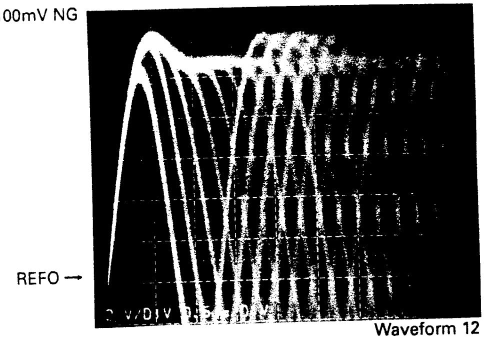
·Symptoms of Mal-adjustment
Difficulty in closing focus, poor playability.

·Measuring Equipment / Jig	·Oscilloscope
·Measuring Point	·RFO
·Test Disc , Mode	·ABEX TCD-784, NORMAL MODE
·Adjustment Point	·VR1004 (RFO OFFSET VR)

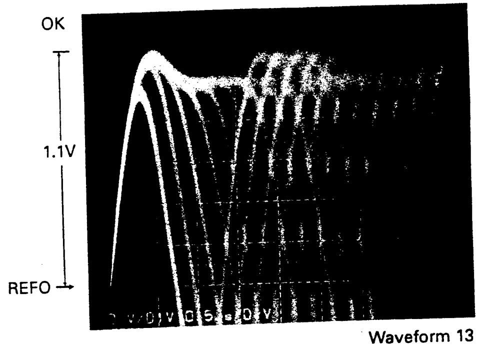


Adjustment Procedure
1) Play track number 18.
2) Adjust VR1004 so that the peak value of the upper envelope of the RFO waveform is at +1.1VDC w.r.t. REFO.(See waveform 12–14)

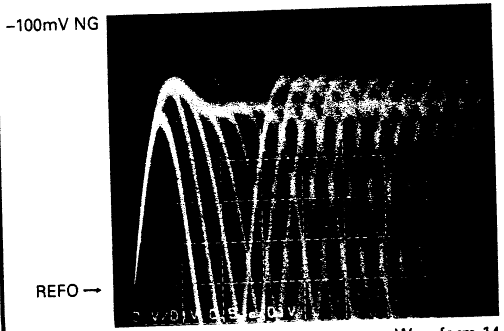
DC Mode
0.2V/div.
0.5μs/div.



Waveform 12



Waveform 13

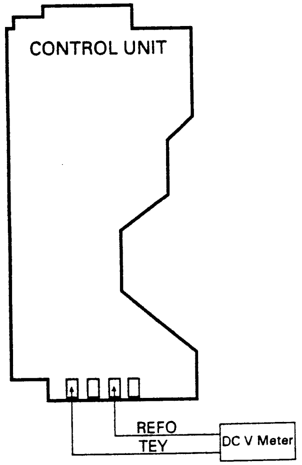


Waveform 14

7 Tracking Error Offset Adjustment 2

·Purpose :
To check the offset of the tracking pre-amp is zero and adjust if necessary.
·Symptoms of Mal-adjustment :
Track search NG, Carriage runaway, Poor playability

·Measuring Equipment / Jig	·DC V Meter
·Measuring Point	·TEY
·Test Disc , Mode	·No disc, TEST MODE
·Adjustment Point	·VR1001(TE OFFSET VR)

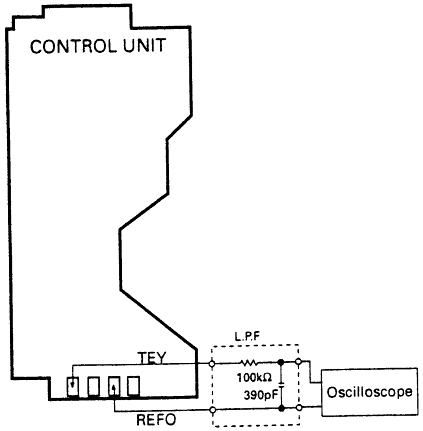

CONTROL UNIT
REFO
TEY
DC V Meter

Adjustment Procedure
1.Switch the regulator on.
2.Using VR1001, adjust TEY to 0 ± 25mV w.r.t. REFO.

8 Tracking Balance Adjustment 2

·Purpose :
To equate the sensitivity of the F channel to that of the E channel.This needs only be done if the TE OFFSET volume was re-adjusted in the previous step
·Symptoms of Mal-adjustment:
Track search NG,Poor playability, carriage runaway

·Measuring Equipment / Jig	·Oscilloscope, L.P.F.
·Measuring Point	·TEY
·Test Disc , Mode	·ABEX TCD-784, TEST MODE
·Adjustment Point	·VR1002 (T.BAL VR)


CONTROL UNIT
L.P.F
TEY
100kΩ
390pF
Oscilloscope
REFO

Adjustment Procedure
1.Load Disc and switch the regulator on.
2.Position the PU unit in the center of the disc using the **TR+** & **TR-** keys.
3.Close focus by pressing key **3**.
4.Observing the TEY waveform on the oscilloscope, adjust VR1002 until the positive and negative halves have the same amplitude (See waveform 7–9).
Check
After adjustment the TEY waveform should have an amplitude of 1.5±0.65 Vpp (ABEX-784)

4.2 TUNER SECTION

● Connection Diagram

NOTE:
Select C1 so that total capacity of 80pF is attained from the direction of the receiver jack.
Z: Output impedance of SSG.

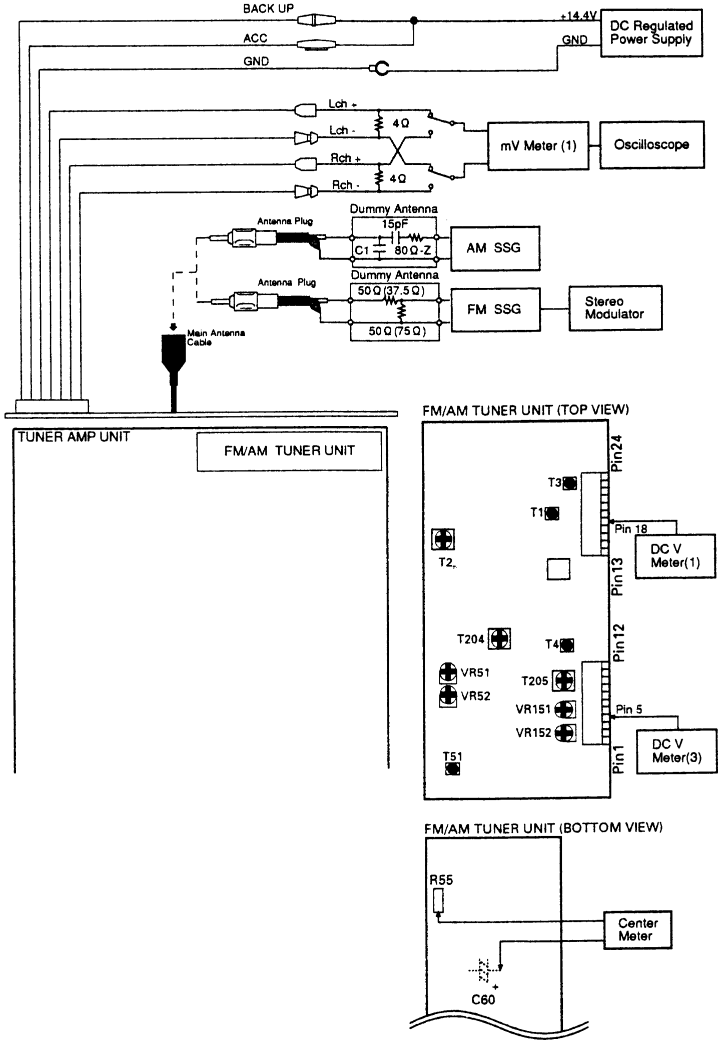

BACK UP
ACC
GND
+14.4V
GND
DC Regulated Power Supply
Lch +
Lch -
Rch +
Rch -
4Ω
4Ω
mV Meter (1)
Oscilloscope
Antenna Plug
Dummy Antenna
15pF
C1
80Ω-Z
AM SSG
Antenna Plug
Dummy Antenna
50Ω(37.5Ω)
50Ω(75Ω)
FM SSG
Stereo Modulator
Main Antenna Cable
TUNER AMP UNIT
FM/AM TUNER UNIT
FM/AM TUNER UNIT (TOP VIEW)
Pin24
T3
T1
Pin 18
DC V Meter(1)
T2
Pin13
Pin12
T204
T4
VR51
VR52
T205
VR151
VR152
Pin 5
DC V Meter(3)
T51
Pin1
FM/AM TUNER UNIT (BOTTOM VIEW)
R55
Center Meter
C60

Fig.10

AM ADJUSTMENT

(999) : ES Model tuning steps at 9 kHz

		AM SSG(400Hz,30%)		Displayed	Adjustment	Adjustment Method
	No.	Frequency(kHz)	Level(dBμV)	Frequency(kHz)	Point	(Switch Position)
IF	1	1,000 (999)	20	1,000(999)	T204,T205,	mV Meter(1) : Maximum

FM ADJUSTMENT

(108) : ES Model

Modulation M:MONO MOD., 400Hz 100%(75kHz Dev.)
S:STEREO MOD., 1kHz, L or R=90%, Pilot=10%(67.5kHz+7.5kHz Dev.)

NOTE:Before proceeding to further adjustments after switching power ON, let the tuner run for ten minutes to allow the circuits to stabilize.

		FM SSG		Displayed	Adjustment	Adjustment Method
	No.	Frequency(MHz)	Level(dBf)	Frequency(MHz)	Point	(Switch Position)
TUN Volt	1	107.9 M (108)	65	107.9 (108)	T4	DC V Meter(1) : 6.5V±0.1V
IF	1	98.1 M	65	98.1	T51	Center Meter:0
ANT,RF	1	98.1 M	10	98.1	T1,T3	mV Meter(1) : Maximum
IFT	1	98.1 M	10	98.1	T2	mV Meter(1) : Maximum (STEREO MODE)
Soft Mute	1	98.1 M	65	98.1		mV Meter(1) : A (STEREO MODE)
	2	98.1 M	15	98.1	VR52	mV Meter(1) : A-3dB
MPX	1	98.1 S	65	98.1	VR152	mV Meter(1) : Separation Maximum
ARC	1	98.1 S	40	98.1	VR151	mV Meter(1) : Separation 5dB
SD	1	98.1 S	22	98.1	VR51	DC V Meter(3) : Approx. 5V

5. ERROR NUMBERS AND NEW TEST MODE

● Error Number Indication

If the CD should fail to operate or if an error has taken place during operation the player will enter into the error mode, and the cause of the error will be numerically indicated.

This is aimed at assisting in analysis or repair.

(1) Basic Means of Display

·With ERROR indicated in "MODE" on IP-BUS Display date, an error code is transmitted by the use of MIN and SEC. The MIN and SEC data will be identical.

·Examples of Display E-XX

(2) Error Codes

Error Code	Classification	Description	Cause/Detail
10	ELECTRIC	Carriage home failure	Carriage doesn't move to or from the innermost position →Home switch failed and/or carriage immobile
11	ELECTRIC	Focus failure	Focus failed →Defects, disc upside-down, severe vibration
12	ELECTRIC	SETUP failure Subcode failure	Spindle failed to lock or subcode unreadable →Spindle defective, defect, severe vibration
14	ELECTRIC	Mirror failure	Unrecorded CD-R The disc is upside-down, defects, vibration
17	ELECTRIC	Set up failure	AGC protect failed →Defects, disc upside-down, severe vibration
30	ELECTRIC	Search time out	Failed to reach target address →Carriage/tracking defective and/or defects
A0	SYSTEM	Power failure	Power overvoltage or short circuit detected →Switching transistor defective and/or power abnormal

"defects" means scratches, dirt etc an the surface of the disc.

● New Test Mode(aging operation and setup analysis)

The single CD player plays in normal mode. After being set up, it will display FOK (focus), LOCK (spindle), subcode, sound skip, protection against a mechanical error or the like, occurrence of an error, cause and time of an expiry, if any, (and disk number)

During the setup,the CD software operation status (internal RAM and C-point)is displayed.

(1) How to enter NEW TEST Mode

See the test mode flow chart Page 1-20.

(2) Relations of keys between TEST and NEW TEST Modes

Keys	Test Mode		New Test Mode	
	Regulator OFF	Regulator ON	PLAY in progress	Error Occurred, Protection Activated
BAND/REL	Regulator ON	Regulator OFF	—	Time of occurrence/ cause of error select
TR+	—	FWD-Kick	TR+	—
TR-	—	REV-Kick	TR-	—
1	—	Tracking close	PAUSE	—
2	—	Tracking open	REPEAT	—
3	—	Focus close	RANDOM	—
TR+ & TR-	To New Test Mode	Focus Mode Select	AUTO/MANU	TRACK No./ time of occurrence select

Operations,such as EJECT, CD ON/OFF, etc. are performed normally

(3) Error Cause (Error Number) Code

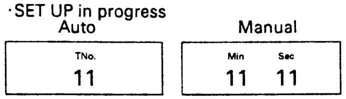
Error Code	Classification	Mode	Description	Cause/Detail	
40	ELECTRIC	PLAY	FOK=L	Put out of focus	Scratch, Stain, Vibration, Servo defect, etc...
41	ELECTRIC	PLAY	LOCK=L 150ms	Spindle unlock	
42	ELECTRIC	PLAY	Subcode unacceptable 500ms	Failed to read subcode	
43	ELECTRIC	PLAY	Sound skipped	Last address memory operated	

(4) Indicating an Operation Status During Setup

Status No.	Description	Protection operation
01	Carriage home mode started	None
02	Carriage moving inwards	10-second time out, Home switch failed
03	Carriage moving outwards	10-second time out, Home switch failed
05	Carriage moving outwards	None
11	Setup started	None
12	Spindle turn/Focus search started	None
13	Waiting for focus closure (XSI=L)	Failure to close focus
10,14	Waiting for focus closure (FOK=H)	Failure to close focus
15, 16, 17	Focus closed, Tracking open	Focus disrupted
18	During focus AGC Subcode waiting	Focus disrupted
19	During tracking AGC	Disrupted focus
20	Waiting for MIRR ,LOCK or subcode read Carriage closed, SPINDLE=ADAPTiVE	Focus disrupted, MIRR NG, Failure to lock, failed to read subcode

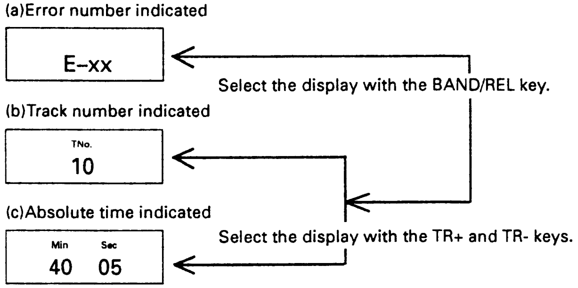
(5) Example of Display.

·SET UP in progress


Auto
Manual
TNo.
11
Min
Sec
11
11

·Operation (PLAY, SEARCH, etc.) in progress perfectly identical with that in the normal mode.

·Protection/Error upon occurrence


(a)Error number indicated
E-xx
Select the display with the BAND/REL key.
(b)Track number indicated
TNo.
10
(c)Absolute time indicated
Select the display with the TR+ and TR- keys.
Min
Sec
40
05

6. EXPLODED VIEW PARTS LIST

● Chassis(Detachable Type)(Exploded View:Page 2-5)

NOTES:

●Parts marked by "✱"are generally unavailable because they are not in our Master Spare Parts List.

●Parts marked by "⦿"are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

● Parts List(DEH-505/UC)

Mark	No.	Description	Part No.
	1	Screw	BSZ26P050FMC
	2	Screw	BSZ26P080FMC
	3	Screw	PSS26P060FZK
	4	Screw	BSZ30P060FMC
	5	Screw	BSZ30P120FMC
	6	Cord Assy	CDE4143
	7	Cap	CNS1472
	8	Resistor	RS1/2P102JL
	9	Screw	CBA1284
	10	Handle	CNC4947
	11	Bush	CNV1009
	12	Case	CNB1817
	13	Holder	CNC3850
	14	Holder	CNC4946
	15	Insulator	CNM3726
	16	P.C.Board	CNP3534
	17	Case	CNS2269
	18	Cushion	CNM3074
	19	·····	
	20	Holder	CNV3620
	21	Chassis Unit	CXA5934
	22	CD Mechanism Module	CXK2800
	23	Tuner Amp Unit	CWX1653
	24	Screw	BSZ26P120FMC
	25	·····	
	26	Antenna Cable	CDH1146
	27	Plug(CN951)	CKM1139
	28	·····	
	29	Connector(CN601)	CKS1534
	30	Connector(CN651)	CKS1546
	31	·····	
	32	·····	
	33	Bracket	CNC4940
	34	Holder	CNC5013
	35	Bracket	CNC5016
	36	·····	
	37	Heat Sink	CNR1307
	38	Spacer	CNM3343
	39	IC(IC551)	PA3029A
	40	Screw	BSZ30P060FMC
	41	Bracket	CNC5014
	42	FM/AM Tuner Unit	CWE1312
	43	Antenna Jack	CKX1043
	44	Holder	CNC4880
	45	Detach Grille Assy	CXA5868
	46	Screw	BUZ20P100FZK
	47	Button	CAC4040
	48	Button	CAC4041
	49	Button	CAC4042
	50	Button(+ -)	CAC3741
	51	Button(SOURCE)	CAC3742
	52	·····	
	53	Button	CAC3744
	54	Grille Unit	CXA5923
	55	Cover	CNS2818
	56	Key Board Unit	CWX1663
	57	LCD	CAW1229
	58	Holder	CNC5010
	59	Lens	CNV3671
	60	Rubber	CNV3672
	61	Connector	CNV3673
	62	Rubber	CNV3675
	63	Spacer	CNM4042
	64	Plug(CN921)	CKS2402
	65	Panel Assy	CXA5877
	66	Screw	BPZ20P060FMC
	67	Spring	CBH1484
	68	Socket	CKS2783
	69	Holder	CNC4943
	70	Holder	CNC4944
	71	P.C.Board	CNP3526
	72	Arm	CNV3696
	73	Arm	CNV3697
	74	Panel Unit	CXA5914
	75	Screw	PMS20P030FZK
	76	Detach Mechanism Unit	CXA5188
	77	Washer	CBF1039
	78	Spring	CBH1484
	79	Arm	CNV3292
	80	Arm	CNV3293

Mark	No.	Description	Part No.
	81	Holder Unit	CXA5124
	82	IC(IC971)	PA2023A
	83	Plug(CN851)	CKS1242
	84	Cord	CDE4120
	85	Cap	CNV2680
	86	Spacer	CNM4027
	87	Remote Control Assy	CXA6155
	88	Battery Cover	CNS2850
	89	IC(IC922)	RPM-678CBR
	90	·····	
	91	Spring	CBH-865
	92	Panel	CNS2786

● The DEH-503/ES, DEH-45/UC, DEH-405/UC, DEH-305/US and DEH-303/ES Parts Lists enumerate the parts which differ from those enumerated in the DEH-505/UC Parts List only. The parts other than those enumerated in the former are identical with those in the latter, to which you are requested to refer, accordingly. The DEH-505/UC Parts List is given on page 1-34.

		DEH-505/UC	DEH-503/ES	DEH-45/UC	DEH-405/UC	DEH-305/US	DEH-303/ES
Mark No.	Description	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.
17	Case	CNS2269	CNS2269	CNS2269	CNS2269	•••••	•••••
18	Cushion	CNM3074	CNM3074	CNM3074	CNM3074	•••••	•••••
19	Cap	•••••	•••••	•••••	CNV2680	CNV2680	CNV2680
23	Tuner Amp Unit	CWX1653	CWX1657	CWX1654	CWX1655	CWX1656	CWX1659
25	Cord	•••••	•••••	•••••	CDE4137	CDE4137	CDE4137
28	Plug(CN851)	•••••	•••••	•••••	CKS1238	CKS1238	CKS1238
35	Bracket	CNC5016	CNC5016	CNC5016	CNC5015	CNC5015	CNC5015
45	Detach Grille Assy	CXA5868	CXA5872	CXA5869	CXA5870	CXA5871	CXA6141
54	Grille Unit(Grille)	CXA5923	CXA5924	CNS2839	CNS2840	CNS2841	CNS2843
56	Key Board Unit	CWX1663	CWX1663	CWX1665	CWX1665	CWX1666	CWX1666
83	Plug(CN851)	CKS1242	CKS1242	CKS1242	•••••	•••••	•••••
84	Cord	CDE4120	CDE4120	CDE4140	•••••	•••••	•••••
85	Cap	CNV2680	CNV2680	CNV2680	•••••	•••••	•••••
86	Spacer	CNM4027	CNM4027	•••••	•••••	•••••	•••••
87	Remote Control Assy	CXA6155	CXA6155	•••••	•••••	•••••	•••••
88	Battery Cover	CNS2850	CNS2850	•••••	•••••	•••••	•••••
89	IC(IC922)	PRM-678CBR	PRM-678CBR	•••••	•••••	•••••	•••••

● Chassis(Non Detachable Type)(Exploded View:Page 2-7)

● Parts List(DEH-205/UC, DEH-203/ES)

Mark	No.	Description	Part No.
	1	Screw	BSZ26P050FMC
	2	Screw	BSZ26P080FMC
	3	Screw	BSZ30P060FMC
	4	Screw	BSZ30P120FMC
	5	Cord Assy	CDE4143
	6	Case	CNB1817
	7	Holder	CNC3850
	8	Holder	CNC4946
	9	Insulator	CNM3726
	10	P.C.Board	CNP3534
	11	Panel	CNS2786
	12	Cap	CNV2680
	13	Holder	CNV3620
	14	Tuner Amp Unit(DEH-205/UC)	CWX1658
		Tuner Amp Unit(DEH-203/ES)	CWX1660
	15	IC(IC971)	PA2023A
	16	Chassis Unit	CXA5934
	17	CD Mechanism Module	CXK2800
	18	Spring	CBH-865
	19	LCD	CAW1229
	20	Screw	CBA1284
	21	IC(IC551)	PA3029A
	22	Resistor	RS1/2P102JL
	23	Cap	CNS1472
	24	Handle	CNC4947
	25	·····	
	26	Bush	CNV1009
	27	Screw	BSZ26P120FMC
	28	Cord	CDE4137
	29	Antenna Cable	CDH1146
	30	Plug(CN951)	CKM1139
	31	Plug(CN851)	CKS1238
	32	Connector(CN601)	CKS1534
	33	Connector(CN651)	CKS1546
	34	Bracket	CNC4940
	35	Holder	CNC5013
	36	Bracket	CNC5015
	37	Spacer	CNM3343
	38	Heat Sink	CNR1307
	39	Screw	BUZ20P100FMC
	40	Button	CAC4040
	41	Button(+ -)	CAC4041
	42	Button	CAC4042
	43	Button	CAC3741
	44	Button(SOURCE)	CAC3742
	45	Cover	CNM3752
	46	Grille(DEH-205/UC)	CNS2822
		Grille(DEH-203/ES)	CNS2824
	47	Holder	CNV3674
	48	Key Board Unit	CWX1667
*	49	P.C.Board	CNP3527
	50	Screw	BSZ30P060FMC
	51	Bracket	CNC5014
	52	Holder	CNC5010
	53	Spacer	CNM4042
	54	Lens	CNV3671
	55	Rubber	CNV3672
	56	Connector	CNV3673
	57	Rubber	CNV3675
	58	Antenna Jack	CKX1043
	59	Holder	CNC4880
	60	FM/AM Tuner Unit	CWE1312

● CD Mechanism Module(Exploded View:Page 2-9)

● Parts List

Mark	No.	Description	Part No.
	1	Screw	PMS26P040FMC
	2	Control Unit	CWX1641
	3	Connector(CN1001)	CKS1955
	4	Connector(CN1701)	CKS2775
	5	Connector(CN1002)	CKS2811
	6	Connector(CN1801)	CKS2196
	7	CD Mechanism Unit	CXA5970
	8	Screw	BMZ20P030FMC
	9	Screw	BSZ20P040FMC
	10	Screw	CBA1041
	11	Screw	CBA1077
	12	Screw	CBA1230
	13	Screw	CBA1296
	14	Washer	CBF1038
	15	Washer	CBF1060
	16	Spring	CBH1415
	17	Spring	CBH1417
	18	Spring	CBH1418
	19	Spring	CBH1421
	20	Spring	CBH1423
	21	Spring	CBH1457
	22	Spring	CBH1552
	23	Spring	CBH1553
	24	Spring	CBH1554
	25	Spring	CBH1555
	26	Spring	CBH1556
	27	Spring	CBH1557
	28	Spring	CBH1558
	29	Spring	CBH1559
	30	Spring	CBH1560
	31	Spring	CBH1576
	32	Spring	CBH1577
	33	Spring	CBH1578
	34	Spring	CBH1583
	35	Spring	CBH1628
	36	Spring	CBL1170
	37	Spring	CBL1171
	38	Spring	CBL1172
	39	Connector	CDE4147
	40	PU Unit	CGY1031
	41	Shaft	CLA2220
	42	Roller	CLA2255
	43	Shaft	CLA2256
	44	Frame	CNC4888
	45	Arm	CNC4889
	46	Lever	CNC4891
	47	Lever	CNC4892
	48	Bracket	CNC4893
	49	Arm	CNC4895
	50	Arm	CNC4898
	51	Bracket	CNC5424
	52	Spacer	CNM3315
	53	Sheet	CNM4066
	54	Sheet	CNM3693
	55	Bracket	CNM3917
	56	Belt	CNT1053
	57	Clamper Unit	CXA6552
	58	Guide	CNV2891
	59	Holder	CNV3276
*	60	Roller	CNV3412
	61	Damper	CNV3952
	62	Arm	CNV3565
	63	Arm	CNV3566
	64	Gear	CNV3567
	65	Gear	CNV3568
	66	Gear	CNV3569
	67	Gear	CNV3570
	68	Arm	CNV3571
	69	Holder	CNV3572
	70	Gear	CNV3573
	71	Holder	CNV3574
	72	Holder	CNV3575
	73	Holder	CNV3576
	74	Rack	CNV3577
	75	Arm	CNV3578
	76	Plate	CNV3629
	77	Guide	CNV3694
	78	P.C.Board	CNP3418
	79	P.C.Board	CNP3666
	80	Screw Unit	CXA2375
	81	Motor Unit	CXA4649
	82	Chassis Unit	CXA5602
	83	Arm Unit	CXA5603
	84	Arm Unit	CXA5604
	85	Bracket Unit	CXA5605
	86	Lever Unit	CXA5606
	87	Arm Unit	CXA5607
	88	Arm Unit	CXA5608
	89	Gear Unit	CXA5609
	90	Motor Unit	CXA5703
	91	Bracket Unit	CXA5938
	92	Frame Unit	CXA6192
	93	Motor Unit	CXA6456
	94	Screw	JFZ17P035FNI
	95	Screw	JFZ20P014FMC
	96	Screw	JFZ20P020FZK
	97	Screw	JFZ20P025FMC
	98	Photo-transistor	PT4800
	99	Washer	YE15FUC
	100	Washer	YE20FUC
	101	Spacer	CNM3999
	102	Sheet	CNM4028
	103	Holder	CNV3805
	104	Spacer	CNC5436
	105	Screw	JFZ20P045FMC

7. ELECTRICAL PARTS LIST

NOTE:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

  Chip Resistor

  RS1/○S○○○J,RS1/○○S○○○J

  Chip Capacitor (except for CQS.....)

  CKS....., CCS....., CSZS.....

Unit Number : CWE1312
Unit Name : FM/AM Tuner Unit

MISCELLANEOUS

=====Circuit Symbol & No.	Part Name=====	Part No.
IC 1		PA2021B
IC 2		PA2022A
Q 1		3SK195
Q 2 202		2SC2712
Q 3		DTC124EU
Q 51		DTC124TU
Q 52		2SC4207
Q 201		2SK435
D 1		1SV172-F1
D 2 3 4		KV1410
D 5		MA151WK-MT
D 6 151 202		MA157-MR
D 201		MA157-MR
D 203		SVC203CP
L 1	Inductor	LCTBR12K2125
L 2 52	Ferri-Inductor	LAU150K
L 51	Ferri-Inductor	LAU2R2K
L 201	Ferri-Inductor	LAU4R7K
L 202	Coil 1mH	CTF1026
L 203	Inductor	LAU390K
L 204	Ferri-Inductor	LAU680K
L 205	Ferri-Inductor	LAU330K
L 206	Inductor	CTF1198
T 1	Coil	CTC1078
T 2	Coil	CTE1077
T 3	Coil	CTC1077
T 4	Coil	CTC1079
T 51	Coil	CTC1081
T 202	Coil	CTB1103
T 203	Coil	CTE1076
T 204	Coil	CTE1074
T 205	Coil	CTE1075
CF 1 51 52	Ceramic Filter	CTF1290
CF 201	Ceramic Filter	CTF1291
CF 202		CTF1300
X 151		CSS1308
X 201	Crystal Resonator	CSS1111
VR 51 152	Semi-fixed 22kΩ (B)	CCP1208
VR 52	Semi-fixed 68kΩ (B)	CCP1211
VR 151	Semi-fixed 10kΩ (B)	CCP1206
AR 1	Capacitor with DischargeGap	DSP-201M

RESISTORS

=====Circuit Symbol & No.	Part Name=====	Part No.
R 1		RS1/16S223J
R 2		RS1/16S271J
R 3 10 16 18 20		RS1/16S223J
R 4 5		RS1/16S0R0J
R 6		RS1/16S680J
R 7 14		RS1/16S563J
R 8		RS1/16S152J
R 9		RS1/16S473J
R 11		RS1/16S474J
R 12		RS1/16S123J
R 13 15 217		RS1/16S563J
R 17 206		RS1/16S102J
R 21 22		RS1/16S560J
R 51 74		RS1/16S391J
R 52		RS1/16S152J
R 53		RS1/16S751J
R 54		RS1/16S393J
R 55 157		RS1/16S682J
R 56		RS1/16S332J
R 58 73 203		RS1/16S102J
R 72		RS1/16S391J
R 101		RS1/16S224J
R 102 222		RS1/16S822J
R 103		RS1/16S223J
R 104		RS1/16S822J
R 151 152		RS1/16S272J
R 153		RS1/16S103J
R 154 155 202		RS1/16S103J
R 156		RS1/16S153J
R 158		RS1/16S393J
R 159 216		RS1/16S103J
R 204 213		RS1/16S222J
R 205		RS1/16S823J
R 207		RS1/16S225J
R 208		RS1/16S752J
R 209		RS1/16S822J
R 214		RS1/16S333J
R 215		RS1/16S330J
R 218		RS1/16S333J
R 220		RS1/16S100J
R 221		RS1/16S473J

CAPACITORS

=====Circuit Symbol & No.	Part Name=====	Part No.
C 1 54		CCSRCH220J50
C 2		CCSRCH390J50
C 3 102 154 163 203 210		CKSQYB473K16
C 4 12		CCSRCH070D50
C 5 53		CCSRCH270J50
C 6		CKSRYB222K50
C 7		CCSRCH040C50
C 8 105		CKSRYB222K50
C 9 16		CCSRCH470J50
C 10		CCSRCH090D50
C 11		CKSRYB223K25
C 13		CCSRCH070D50
C 14		CKSRYB103K50
C 15 22 55 101 151 164 219 220 225 227		CKSQYB104K25
C 17		CCSRCH100D50
C 18		CCSRCH080D50
C 19 20 21 52 62 71 74 201 207 209		CKSRYB103K50
C 23		CEA3R3M50LL
C 24 29 73 106 213		CKSRYB223K25
C 25		CKSRYB682K50
C 26 28 231		CEA101M16LL
C 51 223		CKSRYB103K50
C 56 162 211		CEA010M50LL
C 57 64 66 237		CCSRCH101J50
C 58		CKSRYB153K25
C 60		CEAR47M50LL
C 61		CEAR22M50LL
C 63		CKSQYB104K25
C 65		CEA0R1M50LL
C 103		CKSQYB222K50
C 104		CEA4R7M35LL
C 152 153		CKSRYB333K16
C 155		CEAR47M50LL
C 156		CKSQYB333K25
C 158 212		CEA100M16LL
C 159		CCSRCH331J50
C 160		CKSYB105K16
C 161		CKSQYB104K25
C 202		CKSRYB332K50
C 204		CCSRCH120J50
C 205		CCSRCH560J50
C 206 221		CCSRCH680J50
C 208		CEA470M16LL
C 214 230		CKSRYB472K50
C 215 228		CKSRYB103K50
C 216		CCSRCH100D50
C 217		CCSRCH221J50
C 218 234		CEA220M16LL
C 222		CCSRCH150J50
C 224		CCSRCH181J50
C 226		CEA4R7M35LL
C 229		CEAR68M50LL
C 232		CCSRCH390J50
C 233		CKSRYB332K50
C 235		CKSQYB104K25
C 236		CKSRYB223K25

Unit Number : CWX1641
Unit Name : Control Unit

MISCELLANEOUS

=====Circuit Symbol & No.	Part Name=====	Part No.
IC 1001		UPC2571GS
IC 1201		UPD63700GF
IC 1301		PA3026
IC 1302		XRA6285FP
IC 1303		NJM4558M
IC 1601		TC9268F
IC 1602		TA2063F
IC 1701		PQ05TZ51
Q 1001		2SB1260
Q 1601 1602		2SD1781K
Q 1603		2SB709A
D 1601		MA151WA-MN
D 1701 1702 1703 1704		SC016-2
D 1801 1802	Chip LED	CL200IRX
L 1601	Inductor	LCTBR39K2125
X 1601	Crystal Resonator 16.9344MHz	CSS1067
S 1801 1802	Switch(Home,Clamp)	CSN1028
VR1001	Semi-fixed 2.2kΩ (B)	CCP1177
VR1002	Semi-fixed 22kΩ (B)	CCP1183
VR10031004	Semi-fixed 47kΩ (B)	CCP1185

RESISTORS

=====Circuit Symbol & No.	Part Name=====	Part No.
R 1001		RS1/8S100J
R 1002		RS1/8S120J
R 1003 1201 1307 1309		RS1/16S103J
R 1004 1013 1024 1025 1311 1315 1318 1708		RS1/16S102J
R 1005		RS1/16S823J
R 1006		RS1/16S182J
R 1007		RS1/16S333J
R 1011 1012		RS1/16S683J
R 1014 1015 1310		RS1/16S473J
R 1018		RS1/16S622J
R 1019		RS1/16S563J
R 1020		RS1/16S622J
R 1021		RS1/16S513J
R 1022		RS1/16S133J
R 1027		RS1/16S183J
R 1028		RS1/16S822J
R 1301 1302		RS1/16S222J
R 1303 1606 1607		RS1/16S223J
R 1304		RS1/16S123J
R 1305 1306 1705		RS1/16S332J
R 1308		RS1/16S163J
R 1314		RS1/16S0R0J
R 1317		RS1/16S473J
R 1601		RS1/16S301J
R 1604 1605		RS1/16S102J
R 1608 1609		RS1/16S162J
R 1610		RS1/16S103J
R 1801 1802		RS1/8S821J

CAPACITORS

=====Circuit Symbol & No.	Part Name=====	Part No.
C 1001 1008 1010 1011 1303		CKSRYB102K50
C 1002 1609 1706		CEV101M6R3
C 1003		CKSQYB104K16
C 1004		CEV470M6R3
C 1005		CCSRCH101J50
C 1006		CKSRYB561K50
C 1007 1704		CKSYB334K16
C 1009		CCSRCH181J50
C 1012 1307 1310 1605 1608		CKSRYB103K50
C 1013		CKSRYB472K50
C 1014		CCSRCH220J50
C 1015 1016 1017 1018 1201 1202		CKSYF105Z16
C 1021		CKSYB104K16
C 1022		CKSRYB332K50
C 1023		CKSRYB561K50
C 1301 1302		CKSRYF683Z25
C 1304		CKSRYB152K50
C 1305		CKSRYB271K50
C 1308		CKSRYF103Z50
C 1309		CEV470M16
C 1601		CCSRCH151J50
C 1602		CCSRCH100D50
C 1603 1604 1705		CKSYB224K16
C 1606 1607		CCSRCH090D50
C 1612		CEV220M6R3
C 1613 1614		CEV4R7M35
C 1701 1702		CCSRCH100D50
C 1703		CEV220M16

Unit Number : CWX1653
Unit Name : Tuner Amp Unit

MISCELLANEOUS

=====Circuit Symbol & No.	Part Name=====	Part No.
IC 471		NJM4558L
IC 481		LC7538JMHS
IC 482 483		NJM4558MD
IC 501		LC72140M
IC 551		PA3029A

=====Circuit Symbol & No.	Part Name=====	Part No.
IC 601		PDR009B
IC 961		PAJ001A
IC 971		PA2023A
Q 451 452 502 504 508		2SC2712
Q 453 454		DTC314TK
Q 457		2SA1162
Q 501		2SC3295
Q 503		2SC3098
Q 505 509		2SK208
Q 551 604 606 864 957 983		DTC114EK
Q 602 863 982		DTA114EK
Q 603		2SB1238
Q 605 956		2SB1238
Q 607		2SB1238
Q 851 852 861 862		2SC2712
Q 981		2SD2396
D 501 971		MA151WK-MT
D 504 505		MA3027H
D 861		MA151WA-MN
D 951 952 957 961		ERA15-02VH
D 956		ERA15-10VH
D 972 973		1SS133
D 981		RB100AVH
D 984		HZS9LC3
L 501	Ferri-Inductor	CTF-157
L 502	Ferri-Inductor	LAU220K
L 601	Ferri-Inductor	LAU470K
L 602	Ferri-Inductor	LAU470K
L 603	Ferri-Inductor	LAU470K
TH 601	Thermistor	CCX1008
IB 551 552		CWW1338
IB 601		CWW1336
IB 602		CWW1337
X 501	Crystal Resonator	CSS1011
X 601	Crystal Resonator	CSS1023
TUN501	FM/AM Tuner Unit	CWE1312

RESISTORS

R 451 452 514 515 521 522 602 604 612		RS1/10S473J
R 453 454 607		RS1/10S0R0J
R 455 456 457 458 463 464 529 533 536 538		RS1/10S102J
R 459 460 505 855 856 865 866 952 956		RS1/10S223J
R 467 468 488 489 490 491 492 493 494 495		RS1/10S103J
R 471 472		RS1/10S272J
R 473 474		RD1/4PS163JL
R 475 476		RS1/10S273J
R 477 478		RS1/10S331J
R 481 482		RS1/10S272J
R 485 486 487 566 567 568 569		RD1/4PS472JL
R 503 508 509 512 516 530 551 552 553 554		RS1/10S472J
R 504 511 513 534 535 601 603 853 854 863		RS1/10S222J
R 506		RS1/10S221J
R 507 640 641 642 643 644 974		RS1/10S103J
R 510		RS1/10S123J
R 517 518 519 520		RD1/4PS222JL
R 523		RS1/10S563J
R 524		RS1/10S101J
R 525		RS1/10S332J
R 526		RS1/10S331J
R 527		RS1/10S821J
R 528		RS1/10S680J
R 531		RS1/8S103J
R 532		RS1/10S152J
R 539 540 541 616 652 657 658 659 660 662		RS1/10S102J
R 542		RS1/10S822J
R 545 546		RS1/8S0R0J
R 548		RS1/10S330J
R 549		RD1/4PS102JL

=====Circuit Symbol & No.	Part Name=====	Part No.
R 555 556		RS1/10S2R2J
R 557		RD1/4PS102JL
R 558 559 560 561 562 563 564 565		RD1/4PS2R2JL
R 570		RD1/4PS752JL
R 571		RS1/10S560J
R 573		RS1/10S682J
R 613 614 618 619 621 634		RS1/10S473J
R 617		RS1/8S473J
R 620 963		RS1/10S683J
R 622 624		RD1/4PS222JL
R 623 625 971		RS1/10S104J
R 626		RS1/10S183J
R 627 629 632 957 973 984		RS1/10S472J
R 628 630 958		RD1/4PS272JL
R 633		RD1/4PS472JL
R 636 637 638 639		RD1/4PS103JL
R 645 646 647		RS1/10S472J
R 648		RS1/10S682J
R 651		RD1/4PS102JL
R 653 654 655 656		RS1/10S681J
R 663 664 972		RS1/10S102J
R 670 671 672		RD1/4PS472JL
R 851 852 861 862		RD1/4PS821JL
R 864		RS1/8S222J
R 951		RS1/10S0R0J
R 959		RD1/4PS513JL
R 961		RS1/8S823J
R 962		RS1/10S363J
R 964		RD1/4PS473JL
R 965		RD1/4PS273JL
R 966		RS1/10S103J
R 981		RD1/4PS471JL
R 982		RD1/4PS221JL
R 983		RS1/10S392J

CAPACITORS

C 451 452		CEAS4R7M25
C 471 472		CEAS100M16
C 473 474		CCSQCH560J50
C 475 951 963	1000 μF/16V	CCH1149
C 476 477		CKSQYB393K25
C 481 482 851 861		CEAS100M16
C 483 484 485 486 491 492 553 567 568 569		CEA100M16LL
C 487 488		CKSYB224K16
C 489 490		CKSQYB272K50
C 493 494 506 507		CKSQYB223K25
C 495 496		CKSQYB562K50
C 497 498 499 500		CCSQCH330J50
C 501 505 509 512 517		CCSQCH101J50
C 502 607 982		CKSQYB473K25
C 504 510 514 523 952 954		CKSQYB103K25
C 511		CCSQCH681J50
C 513	0.047 μF	CCG1008
C 515		CFTNA474J50
C 516		CEA4R7M35LL
C 518 519		CCSQCH120J50
C 520	4.7 μF/16V	CCH1165
C 551 552 554 555 606		CKSQYB102K50
C 556	3300 μF/16V	CCH1150
C 557 558 601 609 956		CKSQYB104K25
C 559 560 561 562 563 564 565 566		CQMA104J50
C 570 608		CEA100M16LL
C 571 572 573 574		CCSQCH220J50
C 575		CEAS4R7M25
C 603		CKSQYB104K25
C 604 605		CCSQCH150J50

=====Circuit Symbol & No.	Part Name=====	Part No.
C 612 613		CKSQYB102K50
C 852 862		CEA100M16LL
C 853 854 863 864		CCSQCH221J50
C 962		CEAR22M50LL
C 964		CEA2R2M50LL
C 965		CEA220M6R3LL
C 971		CEA010M50LL
C 972		CEAS470M10
C 973		CEAS101M10
C 974		CEAS221M10
C 975	330 μF/10V	CCH1181
C 981		CEAS331M16

Unit Number : CWX1663
Unit Name : Key Board Unit

MISCELLANEOUS

IC 921		LC7582E
IC 922		RPM-678CBR
D 921 922 923		MA153-MC
IL 921 922 923	Lamp 14V40mA	CEL1296
IL 924 925 926	Lamp 14V40mA	CEL1297
LCD901	LCD	CAW1229

=====Circuit Symbol & No.	Part Name=====	Part No.
RESISTORS		
R 921		RS1/10S470J
R 923 926 930 934		RS1/10S822J
R 924 927 931 935		RS1/10S133J
R 925 928 932 936		RS1/10S223J
R 929 933 937		RS1/10S683J
R 938 939		RS1/10S104J
R 940 941 942		RS1/10S103J

CAPACITORS

C 921		CEA470M6R3LS
C 922		CCSQCH301J50
C 923		CKSQYF104Z25
C 924		CKSQYF224Z25
C 925		CKSQYB103K50

Unit Number :
Unit Name : Detector P.C.Board

P 1 2	Photo Transistor	PT4800

Miscellaneous Parts List

M 1	Motor Unit(Spindle)	CXA5703
M 2	Motor Unit(Carriage)	CXA4649
M 3	Motor Unit(Loading)	CXA6456
	PU Unit	CGY1031

- The DEH-503/ES, DEH-45/UC, DEH-405/UC, DEH-305/US, DEH-303/ES, DEH-205/UC and DEH-203/ES Parts Lists enumerate the parts which differ from those enumerated in the DEH-505/UC Parts List only. The parts other than those enumerated in the former are identical with those in the latter, to which you are requested to refer,accordingly. The DEH-505/UC Parts List is given on page 1-38.

TUNER AMP UNIT

	DEH-505/UC	DEH-503/ES	DEH-45/UC	DEH-405/UC	DEH-305/US	DEH-303/ES	DEH-205/UC	DEH-203/ES
Circuit Symbol & No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.
Q603	2SB1238	2SB1238	2SB1238	2SB1238	•••••	•••••	•••••	•••••
Q604	DTC114EK	DTC114EK	DTC114EK	DTC114EK	•••••	•••••	•••••	•••••
Q607	2SB1238	2SB1238	2SB1238	2SB1238	2SB1238	2SB1238	•••••	•••••
Q851,852	2SC2712	2SC2712	2SC2712	•••••	•••••	•••••	•••••	•••••
IB601	CWW1336	CWW1336	CWW1336	CWW1336	CWW1336	CWW1336	•••••	•••••
IB602	CWW1337	CWW1337	CWW1337	CWW1337	CWW1337	CWW1337	•••••	•••••
R607	RS1/10S0R0J	•••••	RS1/10S0R0J	RS1/10S0R0J	RS1/10S0R0J	•••••	RS1/10S0R0J	•••••
R609	•••••	•••••	RS1/10S0R0J	RS1/10S0R0J	RS1/10S0R0J	RS1/10S0R0J	RS1/10S0R0J	RS1/10S0R0J
R610	•••••	•••••	•••••	•••••	RS1/10S0R0J	RS1/10S0R0J	RS1/10S0R0J	RS1/10S0R0J
R611	•••••	RS1/10S473J	•••••	•••••	•••••	RS1/10S473J	•••••	RS1/10S473J
R613	RS1/10S473J	RS1/10S473J	•••••	•••••	•••••	•••••	•••••	•••••
R614	RS1/10S473J	RS1/10S473J	RS1/10S473J	RS1/10S473J	•••••	•••••	•••••	•••••
R627	RS1/10S472J	RS1/10S472J	RS1/10S472J	RS1/10S472J	•••••	•••••	•••••	•••••
R628	RD1/4PS272JL	RD1/4PS272JL	RD1/4PS272JL	RD1/4PS272JL	•••••	•••••	•••••	•••••
R631	•••••	•••••	•••••	•••••	•••••	•••••	RS1/10S0R0J	RS1/10S0R0J
R632	RS1/10S472J	RS1/10S472J	RS1/10S472J	RS1/10S472J	•••••	RS1/10S472J	•••••	•••••
R633	RD1/4PS472JL	RD1/4PS472JL	RD1/4PS472JL	RD1/4PS472JL	RD1/4PS472JL	RD1/4PS472JL	•••••	•••••
R851,852	RD1/4PS821JL	RD1/4PS821JL	RD1/4PS821JL	•••••	•••••	•••••	•••••	•••••
R853,854	RS1/10S222J	RS1/10S222J	RS1/10S222J	•••••	•••••	•••••	•••••	•••••
R855,856	RS1/10S223J	RS1/10S223J	RS1/10S223J	•••••	•••••	•••••	•••••	•••••
C851,852	CEAS100M16	CEAS100M16	CEAS100M16	•••••	•••••	•••••	•••••	•••••
C853,854	CCSQCH221J50	CCSQCH221J50	CCSQCH221J50	•••••	•••••	•••••	•••••	•••••

KEY BOARD UNIT

	DEH-503/ES DEH-505/UC	DEH-45/UC DEH-405/UC	DEH-303/ES DEH-305/US	DEH-203/ES DEH-205/UC
Circuit Symbol & No.	Part No.	Part No.	Part No.	Part No.
IC922	PRM-678CBR	•••••	•••••	•••••
IL924,925,926	CEL1297	CEL1297	•••••	•••••
R921	RS1/10S470J	•••••	•••••	•••••
C921	CEA470M6R3LS	•••••	•••••	•••••

PIONEER
The Art of Entertainment

Service Manual

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HIGH POWER CD PLAYER WITH FM/AM TUNER

DEH-505 UC
DEH-503 ES
DEH-45 UC
DEH-405 UC
DEH-305 US
DEH-303 ES
DEH-205 UC
DEH-203 ES

- **See the service manual CX-540(CRT1574) for the CD mechanism description, disassembly and circuit description.**

CHAPTER 2

CONTENTS

CHAPTER 2

1. BLOCK DIAGRAM 2-3
2. EXPLODED VIEW 2-5
3. CIRCUIT DIAGRAM AND PATTERN 2-14
4. PACKING METHOD 2-33

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PIONEER ELECTRONICS OF CANADA, INC. 300 Allstate Parkway Markham, Ontario L3R 0P2 Canada
PIONEER ELECTRONIC [EUROPE] N.V. Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
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K-FFD. JAN. 1994 Printed in Japan

● LCD(CAW1229)

SEGMENT

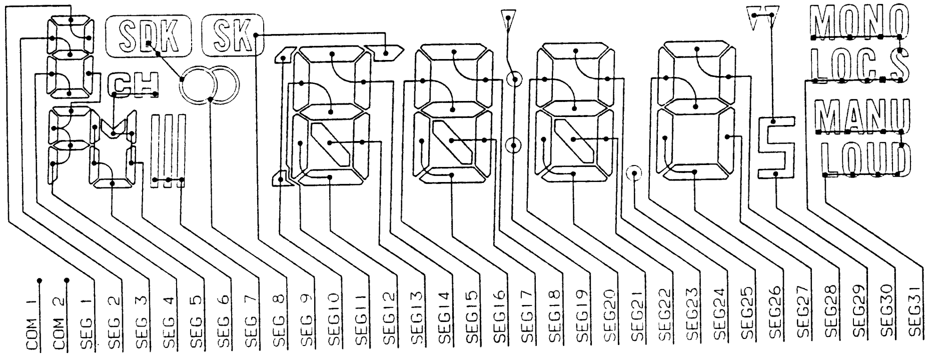
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Fig.1

COMMON

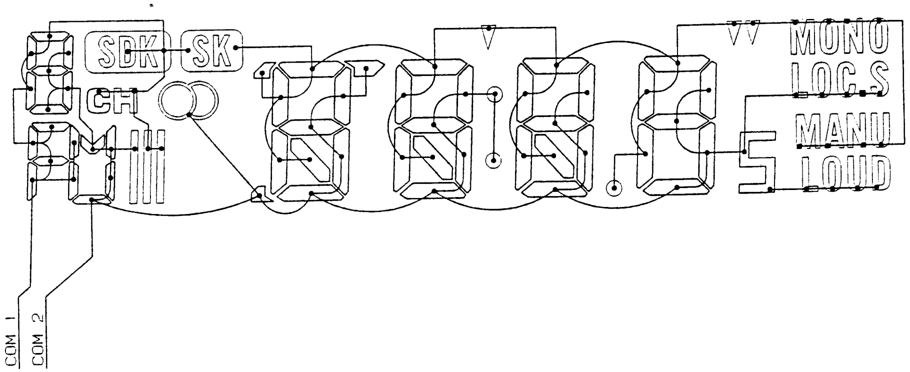
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Fig.2

1. BLOCK DIAGRAM

● DEH-505/UC

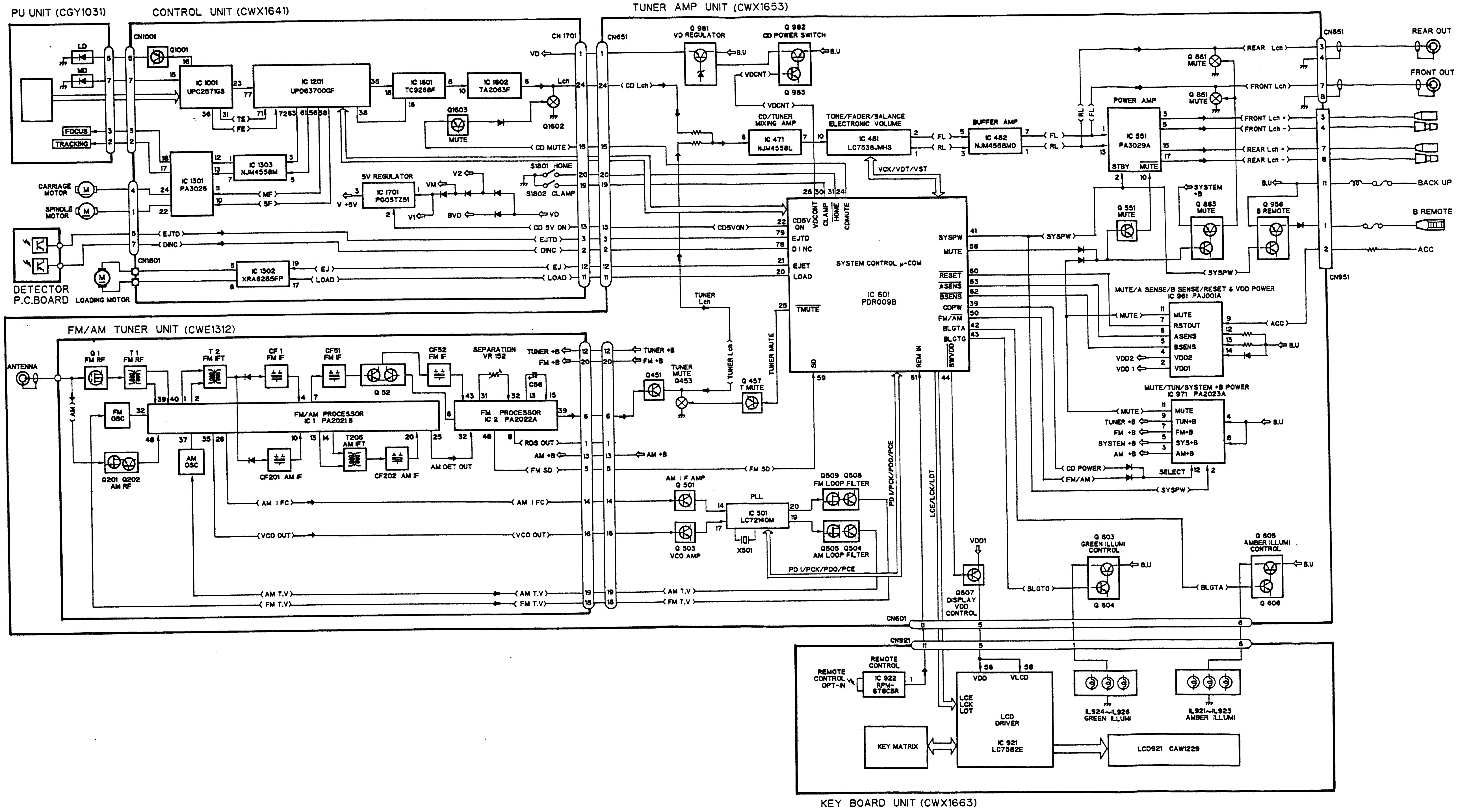
PU UNIT (CGY1031)
CONTROL UNIT (CWX1641)
TUNER AMP UNIT (CWX1653)
FM/AM TUNER UNIT (CWE1312)
KEY BOARD UNIT (CWX1663)
LD
MD
FOCUS
TRACKING
CARRIAGE MOTOR
SPINDLE MOTOR
DETECTOR P.C.BOARD
LOADING MOTOR
CN1001
CN1801
CN 1701
CN651
Q1001
IC 1001 UPC2571GS
IC 1201 UPD63700GF
IC 1601 TC9268F
IC 1602 TA2063F
Q1602
Q1603 MUTE
IC 1301 PA3026
IC 1303 NJM4558M
IC 1302 XRA6265FP
5V REGULATOR
IC 1701 PQ05TZ51
S1801 HOME
S1802 CLAMP
TE
FE
MF
SF
EJTD
DINC
EJ
LOAD
VD
Lch
CD Lch
CD MUTE
CD 5V ON
V2
VM
V1
BVD
V +5V
Q 981 VD REGULATOR
Q 982 CD POWER SWITCH
Q 983
VDCNT
B.U
CD/TUNER MIXING AMP
IC 471 NJM4558L
TONE/FADER/BALANCE ELECTRONIC VOLUME
IC 481 LC7538JMHS
BUFFER AMP
IC 482 NJM4558MD
VCK/VDT/VST
FL
RL
POWER AMP
IC 551 PA3029A
STBY
MUTE
Q 861 MUTE
Q 851 MUTE
REAR Lch
FRONT Lch
FRONT Lch +
FRONT Lch -
REAR Lch +
REAR Lch -
CN851
CN951
REAR OUT
FRONT OUT
BACK UP
B REMOTE
ACC
SYSTEM CONTROL µ-COM
IC 601 PDR009B
CD5V ON
VDCONT
CLAMP
HOME
CDMUTE
EJTD
DINC
EJET
LOAD
TMUTE
SYSPW
MUTE
RESET
ASENS
BSENS
CDPW
FM/AM
BLGTA
BLGTG
SWVDD
SD
REM IN
Q 551 MUTE
Q 863 MUTE
SYSTEM +B
Q 956 B REMOTE
MUTE/A SENSE/B SENSE/RESET & VDD POWER
IC 961 PAJ001A
RSTOUT
ASENS
BSENS
VDD2
VDD1
MUTE/TUN/SYSTEM +B POWER
IC 971 PA2023A
TUN+B
FM+B
SYS+B
AM+B
TUNER +B
FM +B
SYSTEM +B
AM +B
CD POWER
SELECT
TUNER Lch
TUNER MUTE
Q451
TUNER MUTE Q453
Q 457 T MUTE
ANTENNA
Q 1 FM RF
T 1 FM RF
T 2 FM IFT
CF 1 FM IF
CF51 FM IF
CF52 FM IF
Q 52
SEPARATION VR 152
C56
FM OSC
FM/AM PROCESSOR IC 1 PA2021B
FM PROCESSOR IC 2 PA2022A
Q201 Q202 AM RF
AM OSC
CF201 AM IF
T205 AM IFT
CF202 AM IF
AM DET OUT
RDS OUT
FM SD
AM I FC
VCO OUT
AM T.V
FM T.V
AM I F AMP Q 501
Q 503 VCO AMP
PLL
IC 501 LC72140M
X501
Q509 Q508 FM LOOP FILTER
Q505 Q504 AM LOOP FILTER
PD I/PCK/PDO/PCE
LCE/LCK/LDT
VDD1
Q607 DISPLAY VDD CONTROL
Q 603 GREEN ILLUMI CONTROL
Q 604
Q 605 AMBER ILLUMI CONTROL
Q 606
BLGTG
BLGTA
CN601
CN921
REMOTE CONTROL
IC 922 RPM-678CBR
REMOTE CONTROL OPT-IN
VDD
VLCD
LCE
LCK
LDT
LCD DRIVER
IC 921 LC7582E
KEY MATRIX
LCD921 CAW1229
IL924~IL926 GREEN ILLUMI
IL921~IL923 AMBER ILLUMI

Fig.3

2. EXPLODED VIEW

● Chassis (Detachable type)(Parts List : Page 1-34)

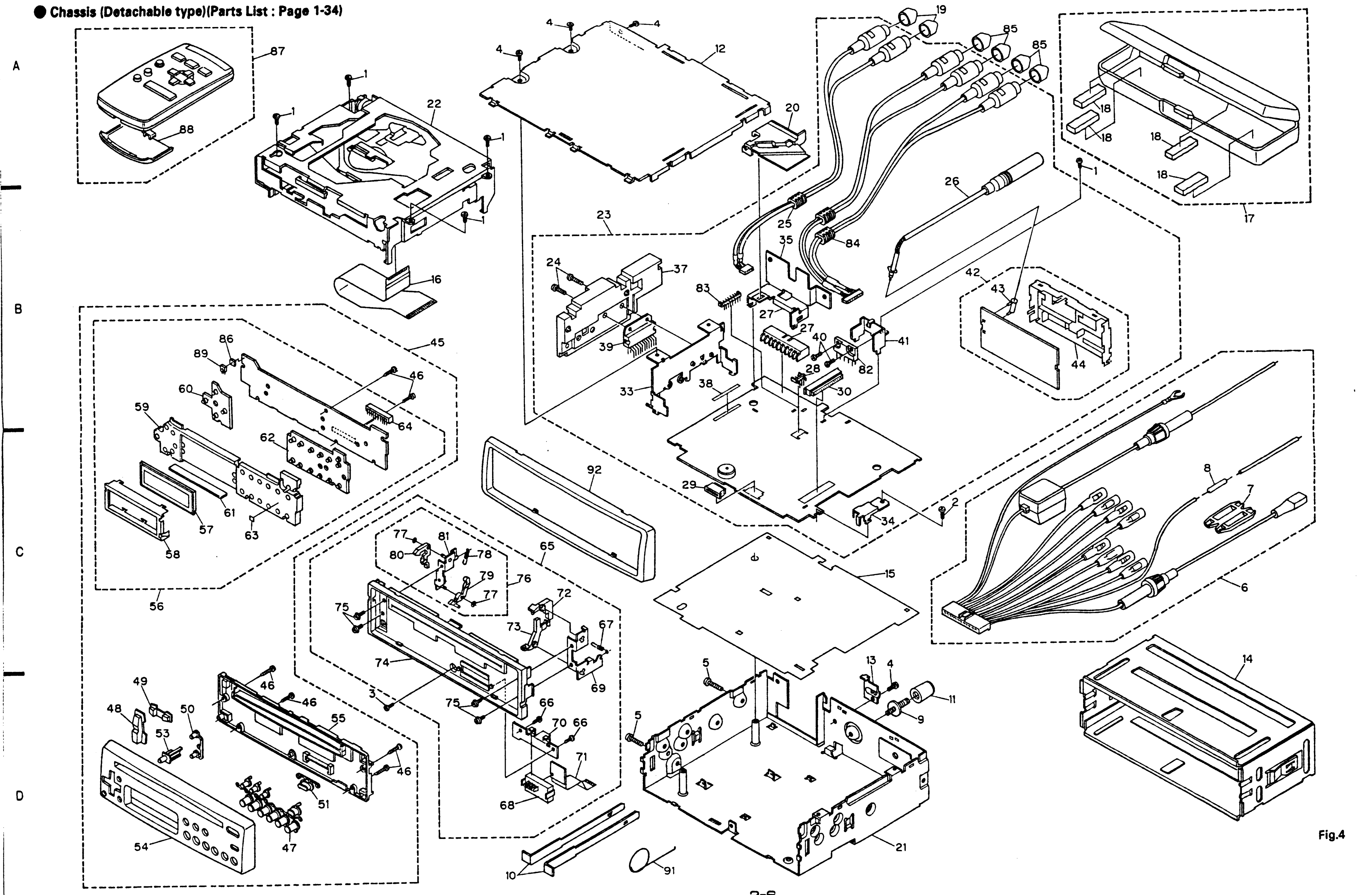
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Fig.4

● Chassis (Non Detachable type)(Parts List : Page 1-36)

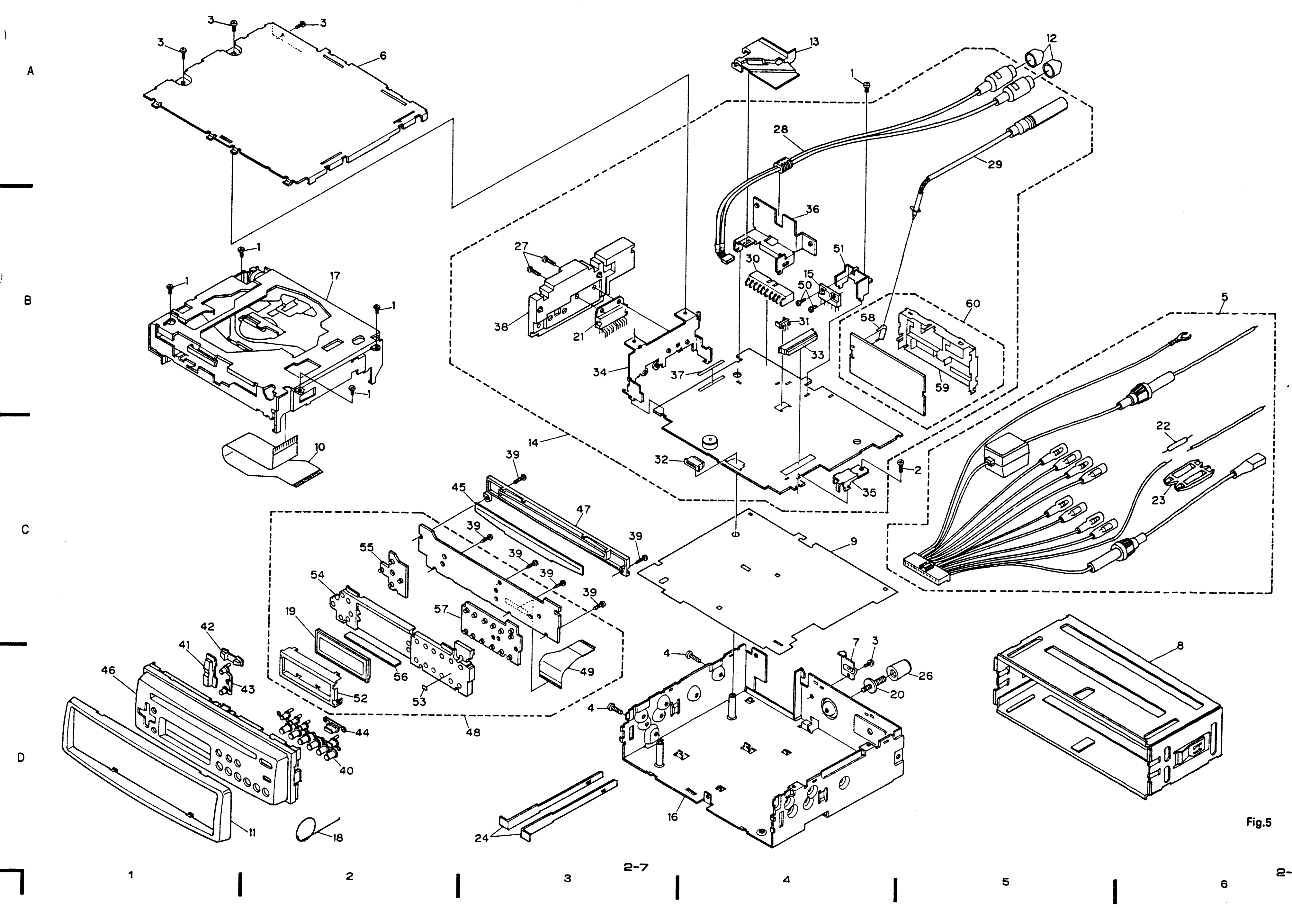
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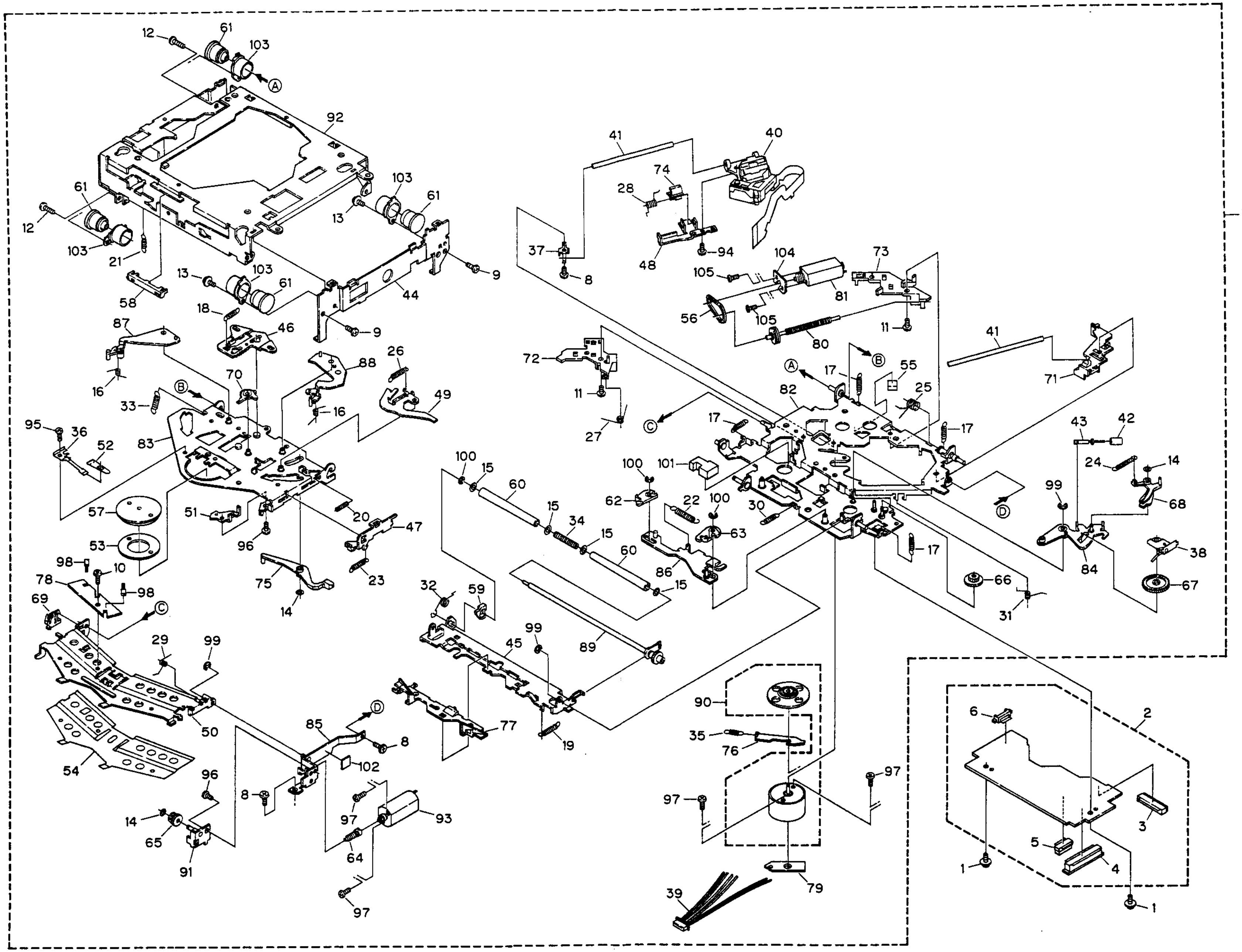
Fig.5

● **CD Mechanism Module(Parts List : Page 1-36)**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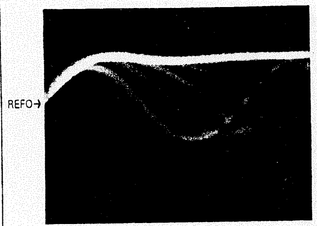
63
15
34
15
60
86
15
17
99
68
84
Ⓓ
38
66
67
31
7
90
35
76
97
97
2
6
3
5
4
1
1
39
79

Fig.6

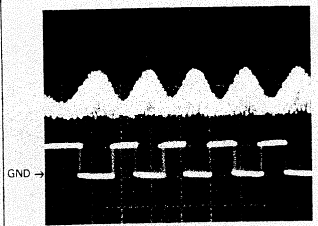
● Waveforms

Note: 1. The encircled numbers denote measuring pointes in the circuit diagram.
2. Reference voltage
REFO: 2.5V

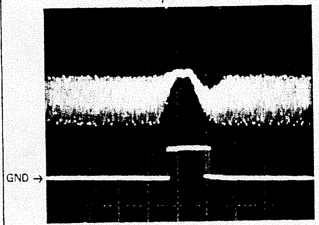
① RFO 0.5V/div. 0.2μs/div.
Normal mode: play



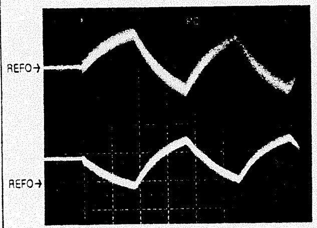
① CH1: RFO 1V/div. 0.5ms/div.
② CH2: MIRR 5V/div.
Test mode: Tracking open



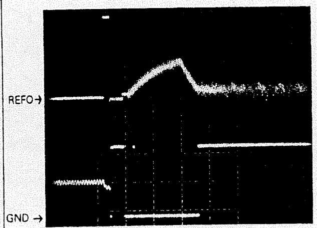
① CH1: RFO 1V/div. 0.5ms/div.
② CH2: MIRR 5V/div.
Normal mode: The defect part passes 800μm.



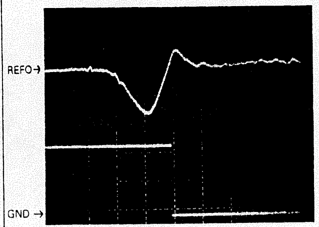
③ CH1: FIN 0.5V/div. 0.2s/div.
④ CH2: FO+ 2V/div.
Test mode: No disc, Focus close



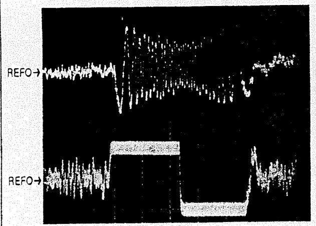
③ CH1: FIN 0.5V/div. 0.2s/div.
⑤ CH2: FOK 2V/div.
Normal mode: Focus close



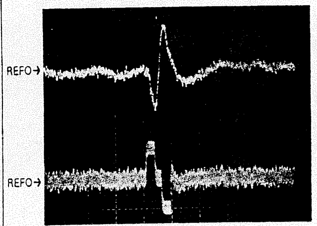
⑥ CH1: FEY 0.5V/div. 1ms/div.
⑦ CH2: XSO 2V/div.
Normal mode: Focus close



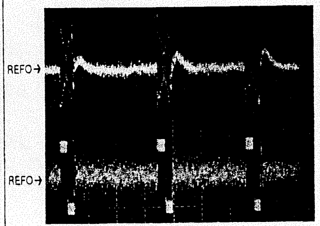
⑧ CH1: TEY 0.5V/div. 0.5ms/div.
⑨ CH2: TIN 0.5V/div.
Test mode: 32 track jump (FWD)



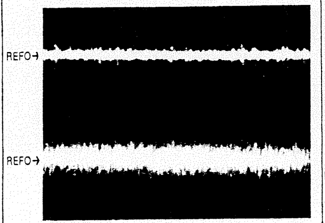
⑧ CH1: TEY 0.5V/div. 0.5ms/div.
⑨ CH2: TIN 0.5V/div.
Test mode: Single jump (FWD)



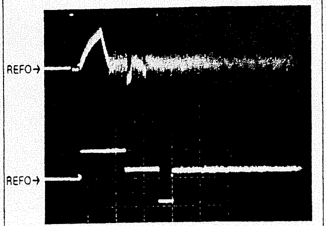
⑧ CH1: TEY 0.5V/div. 5ms/div.
⑨ CH2: TIN 0.5V/div.
Test mode: 100 track jump (FWD)



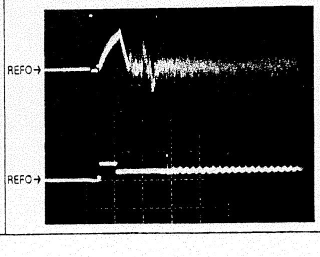
⑥ CH1: FEY 0.2V/div. 20ms/div.
③ CH2: FIN 0.5V/div.
Normal mode: Play



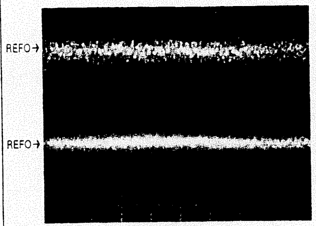
③ CH1: FIN 0.5V/div. 0.5s/div.
⑩ CH2: SIN 1V/div.
Normal mode: Focus close (12cm)



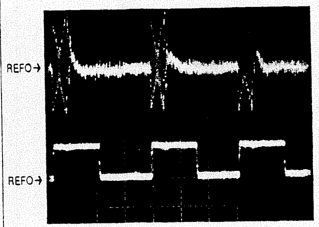
③ CH1: FIN 0.5V/div. 0.5s/div.
⑩ CH2: SIN 1V/div.
Normal mode: Focus close (8cm)



⑧ CH1: TEY 0.5V/div. 20ms/div.
⑨ CH2: TIN 0.5V/div.
Normal mode: Play

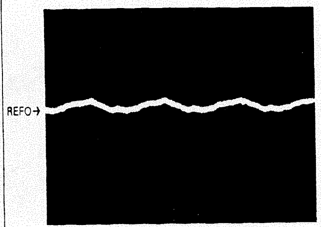


⑧ CH1: TEY 0.5V/div. 5ms/div.
㉓ CH2: CIN 0.5V/div.
Test mode: 100 track jump (FWO)



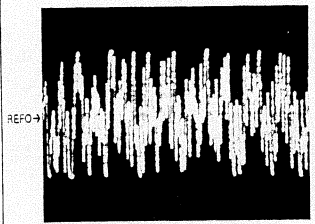
⑩ SIN 0.5V/div. 50ms/div.

Normal mode: 1Play (12cm disc)



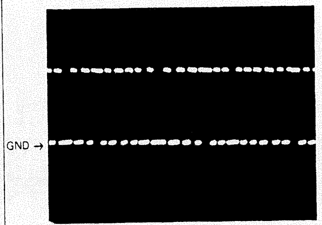
⑩ SIN 0.5V/div. 10ms/div.

Search (12cm disc)

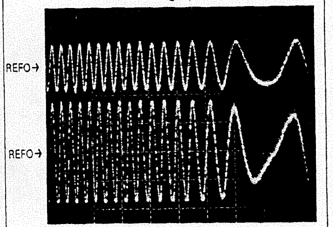


⑪ EFM 2V/div. 5μs/div.

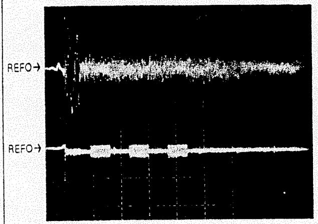
Play



⑧ CH1: TEY 1V/div. 2ms/div.
⑫ CH2: TEC 1V/div.
Test mode: Focus closed
Tracking open

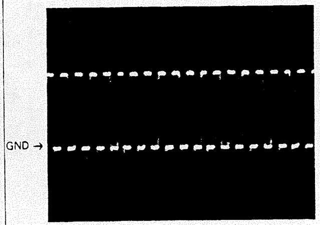


⑧ CH1: TEY 0.5V/div. 0.1s/div.
⑥ CH2: FEY 0.5V/div.
Normal mode: AGC after focus close



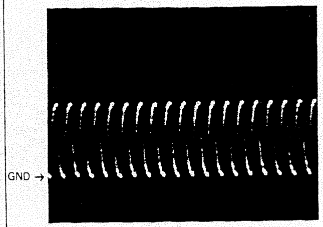
⑮ PLCK 2V/div. 0.5μs/div.

Play



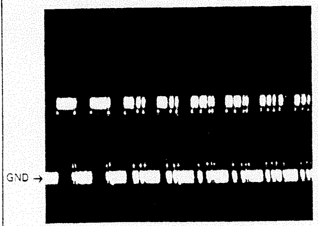
⑯ SCKO 2V/div. 1μs/div.

Play



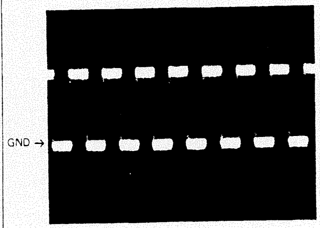
⑰ Dout 2V/div. 10μs/div.

Play



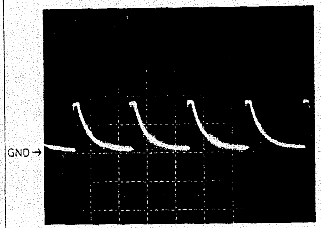
⑱ LRCK 2V/div. 20μs/div.

Play

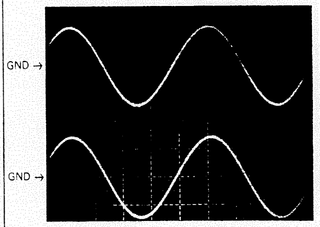


⑲ VD 5V/div. 50ms/div.

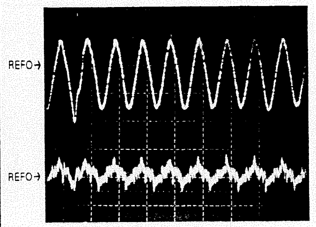
Normal mode: No disc



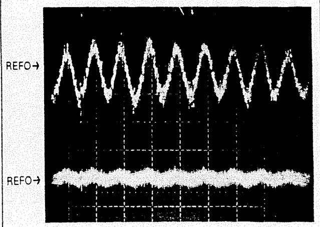
㉒ CH1: R OUT 1V/div.
㉑ CH2: L OUT 1V/div. 0.2ms/div.
Normal mode: Play (1kHz 0dB)



⑥ CH1: FEY 1V/div.
③ CH2: FIN 1V/div. 1ms/div.
Normal mode: During AGC



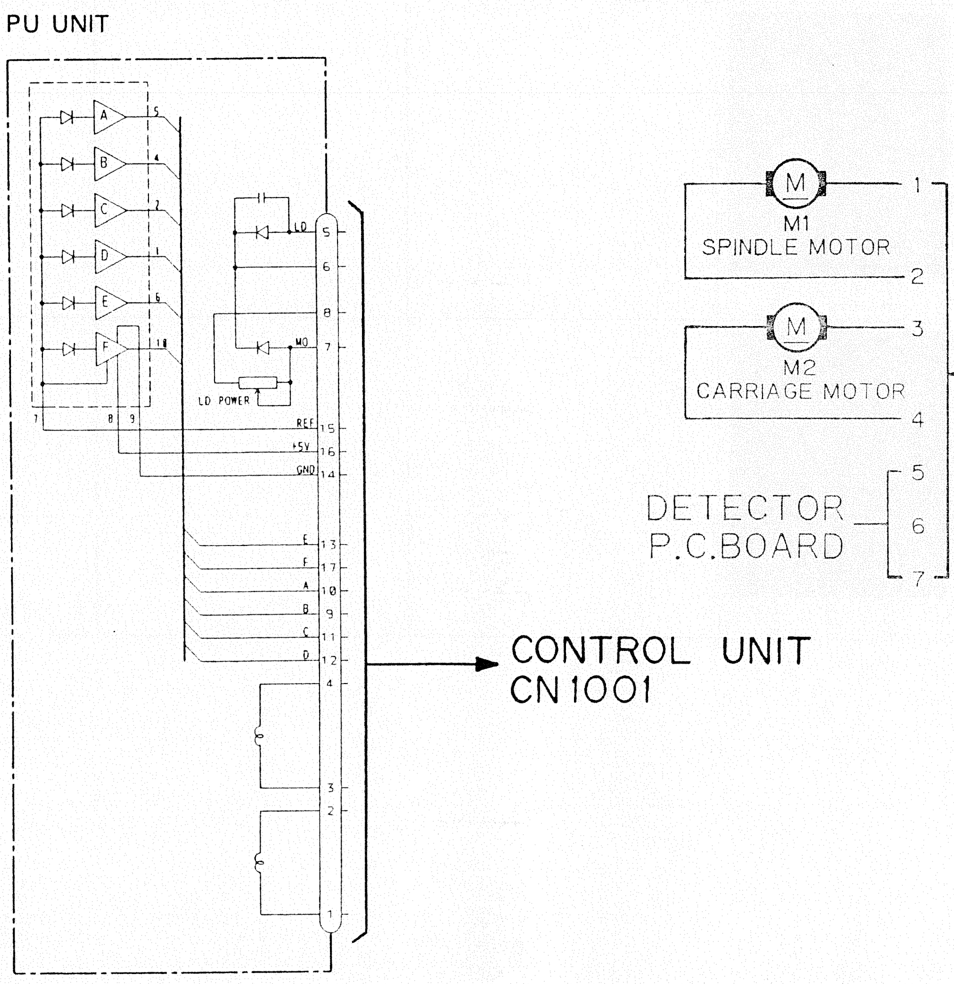
⑧ CH1: TEY 0.2V/div.
⑨ CH2: TIN 0.5V/div. 1ms/div.
Normal mode: During AGC

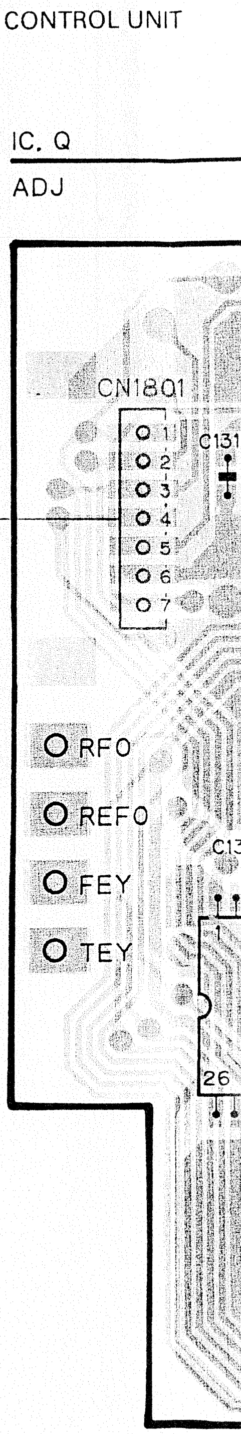


3. CIRCUIT DIAGRAM AND PATTERN

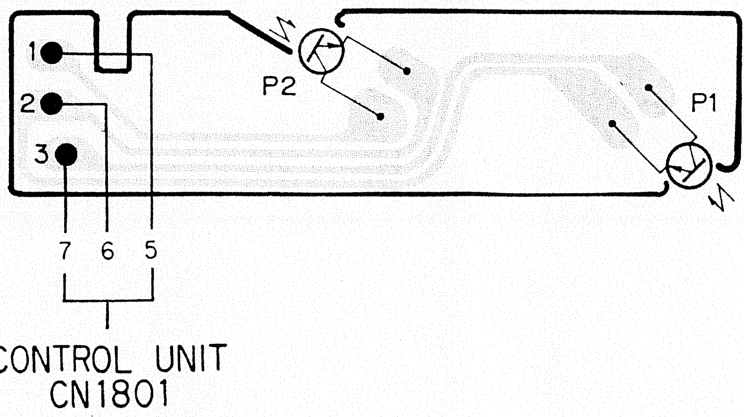
3.1 CD MECHANISM MODULE

● **Connection Diagram**


PU UNIT
A
B
C
D
E
F
LD
MD
LD POWER
REF
+5V
GND
E
F
A
B
C
D
5
6
8
7
15
16
14
13
17
10
9
11
12
4
3
2
1
CONTROL UNIT
CN1001
M
M1
SPINDLE MOTOR
M
M2
CARRIAGE MOTOR
DETECTOR
P.C.BOARD
1
2
3
4
5
6
7


CONTROL UNIT
IC, Q
ADJ
CN1801
1
2
3
4
5
6
7
C131
RFO
REFO
FEY
TEY
C13
26

DETECTOR P.C.BOARD


1
2
3
P2
P1
7
6
5
CONTROL UNIT
CN1801

UNIT

IC302 IC301 IC303 IC1601 IC1602 Q1601 Q1602 Q1603 IC1201 IC1701 Q1001 IC1001 VR1003 VR1002 VR1001 VR1004

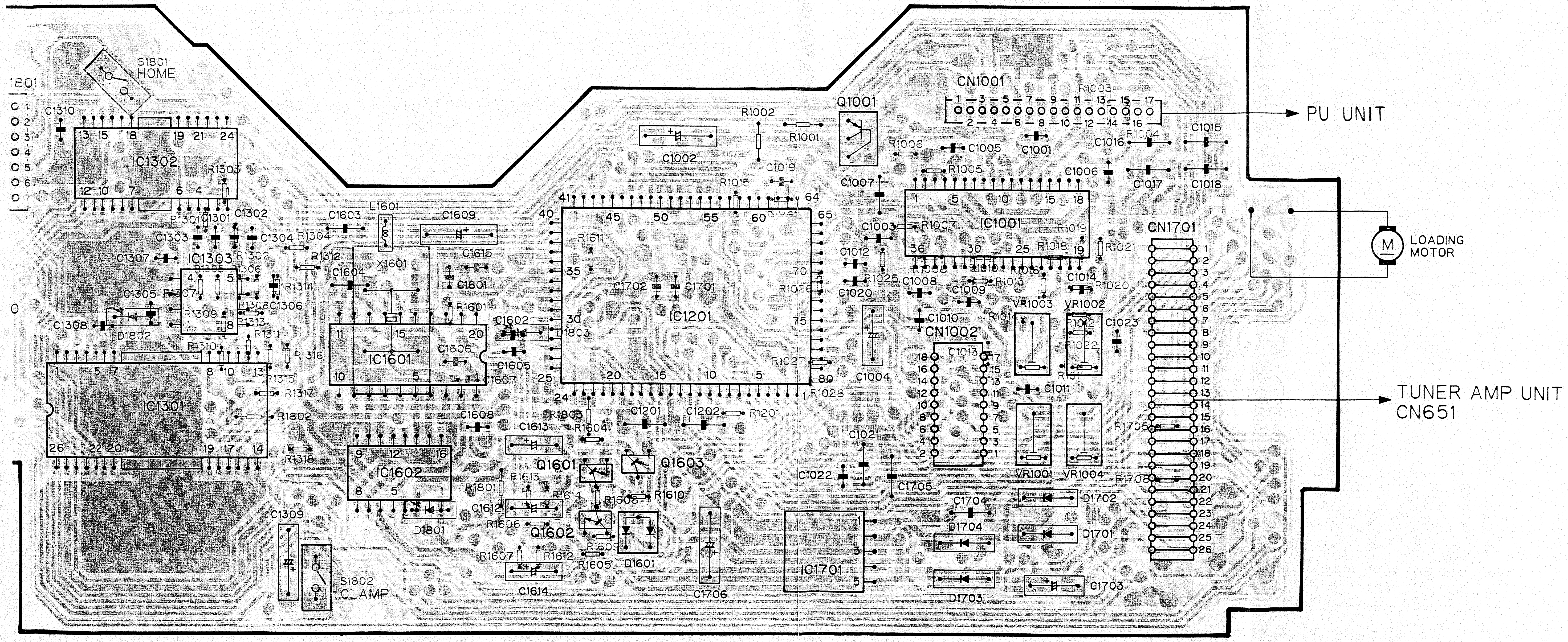
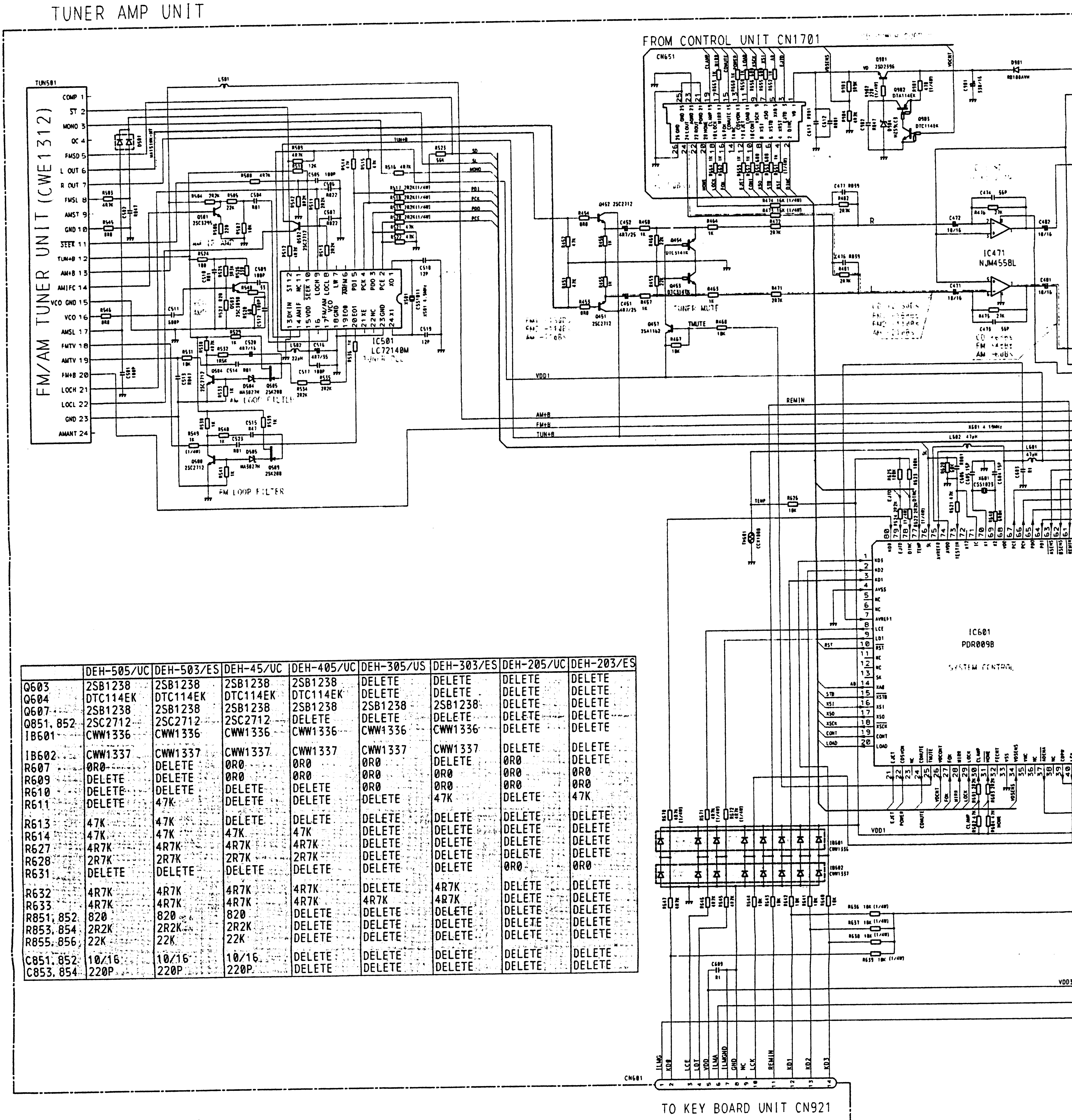

S1801
HOME
1801
C1310
IC1302
R1303
R1301
C1301
C1302
C1303
C1304
R1304
C1307
IC1303
R1302
R1305
R1306
C1305
R1307
R1309
R1308
C1306
R1314
C1308
D1802
R1313
R1311
R1310
R1316
IC1301
R1315
R1317
R1802
R1318
C1309
S1802
CLAMP
C1603
L1601
C1609
C1615
C1604
X1601
C1601
R1601
IC1601
C1606
C1605
C1607
C1602
D1803
C1608
IC1602
D1801
R1312
R1803
R1604
C1613
Q1601
R1801
R1613
R1614
C1612
R1606
Q1602
R1607
R1612
C1614
R1605
R1609
D1601
R1608
R1610
Q1603
C1201
C1202
R1201
R1611
C1702
C1701
IC1201
C1706
C1002
R1002
R1001
C1019
R1015
R1024
R1026
R1027
R1028
Q1001
C1007
C1003
C1012
R1025
C1020
C1004
C1021
C1022
C1705
IC1701
CN1001
R1003
R1004
R1006
C1005
C1001
R1005
C1006
C1016
C1015
C1017
C1018
IC1001
R1007
R1019
R1018
R1021
R1008
R1010
R1013
R1016
C1008
C1009
C1014
R1020
C1010
R1014
VR1003
VR1002
C1023
R1012
R1022
R1011
CN1002
C1013
C1011
VR1001
VR1004
R1705
R1706
C1704
D1702
D1704
D1701
D1703
C1703
CN1701
PU UNIT
LOADING MOTOR
M
TUNER AMP UNIT
CN651

Fig.7


TUNER AMP UNIT
FROM CONTROL UNIT CN1701
CN651
TUN501
FM/AM TUNER UNIT (CWE1312)
COMP 1
ST 2
MONO 3
QC 4
FMSD 5
L OUT 6
R OUT 7
FMSL 8
AMST 9
GND 10
SEEK 11
TUN+B 12
AM+B 13
AMIFC 14
VCO GND 15
VCO 16
AMSL 17
FMTV 18
AMTV 19
FM+B 20
LOCH 21
LOCL 22
GND 23
AMANT 24
IC501
LC72140M
TUNER PLL
AM LOOP FILTER
FM LOOP FILTER
IC471
NJM4558L
TUNER MUTE
TMUTE
VDD1
REMIN
AM+B
FM+B
TUN+B
IC601
PDR009B
SYSTEM CONTROL
IB601
IB602
CN601
ILMG
KD0
LCE
LDT
VDD
ILMA
ILMGND
GND
NC
LCK
REMIN
KD1
KD2
KD3
TO KEY BOARD UNIT CN921

	DEH-505/UC	DEH-503/ES	DEH-45/UC	DEH-405/UC	DEH-305/US	DEH-303/ES	DEH-205/UC	DEH-203/ES
Q603	2SB1238	2SB1238	2SB1238	2SB1238	DELETE	DELETE	DELETE	DELETE
Q604	DTC114EK	DTC114EK	DTC114EK	DTC114EK	DELETE	DELETE	DELETE	DELETE
Q607	2SB1238	2SB1238	2SB1238	2SB1238	2SB1238	2SB1238	DELETE	DELETE
Q851, 852	2SC2712	2SC2712	2SC2712	DELETE	DELETE	DELETE	DELETE	DELETE
IB601	CWW1336	CWW1336	CWW1336	CWW1336	CWW1336	CWW1336	DELETE	DELETE
IB602	CWW1337	CWW1337	CWW1337	CWW1337	CWW1337	CWW1337	DELETE	DELETE
R607	0R0	DELETE	0R0	0R0	0R0	DELETE	0R0	DELETE
R609	DELETE	DELETE	0R0	0R0	0R0	0R0	0R0	0R0
R610	DELETE	DELETE	DELETE	DELETE	0R0	0R0	0R0	0R0
R611	DELETE	47K	DELETE	DELETE	DELETE	47K	DELETE	47K
R613	47K	47K	DELETE	DELETE	DELETE	DELETE	DELETE	DELETE
R614	47K	47K	47K	47K	DELETE	DELETE	DELETE	DELETE
R627	4R7K	4R7K	4R7K	4R7K	DELETE	DELETE	DELETE	DELETE
R628	2R7K	2R7K	2R7K	2R7K	DELETE	DELETE	DELETE	DELETE
R631	DELETE	DELETE	DELETE	DELETE	DELETE	DELETE	0R0	0R0
R632	4R7K	4R7K	4R7K	4R7K	DELETE	4R7K	DELETE	DELETE
R633	4R7K	4R7K	4R7K	4R7K	4R7K	4R7K	DELETE	DELETE
R851, 852	820	820	820	DELETE	DELETE	DELETE	DELETE	DELETE
R853, 854	2R2K	2R2K	2R2K	DELETE	DELETE	DELETE	DELETE	DELETE
R855, 856	22K	22K	22K	DELETE	DELETE	DELETE	DELETE	DELETE
C851, 852	10/16	10/16	10/16	DELETE	DELETE	DELETE	DELETE	DELETE
C853, 854	220P	220P	220P	DELETE	DELETE	DELETE	DELETE	DELETE

3.2 TUNER AMP UNIT

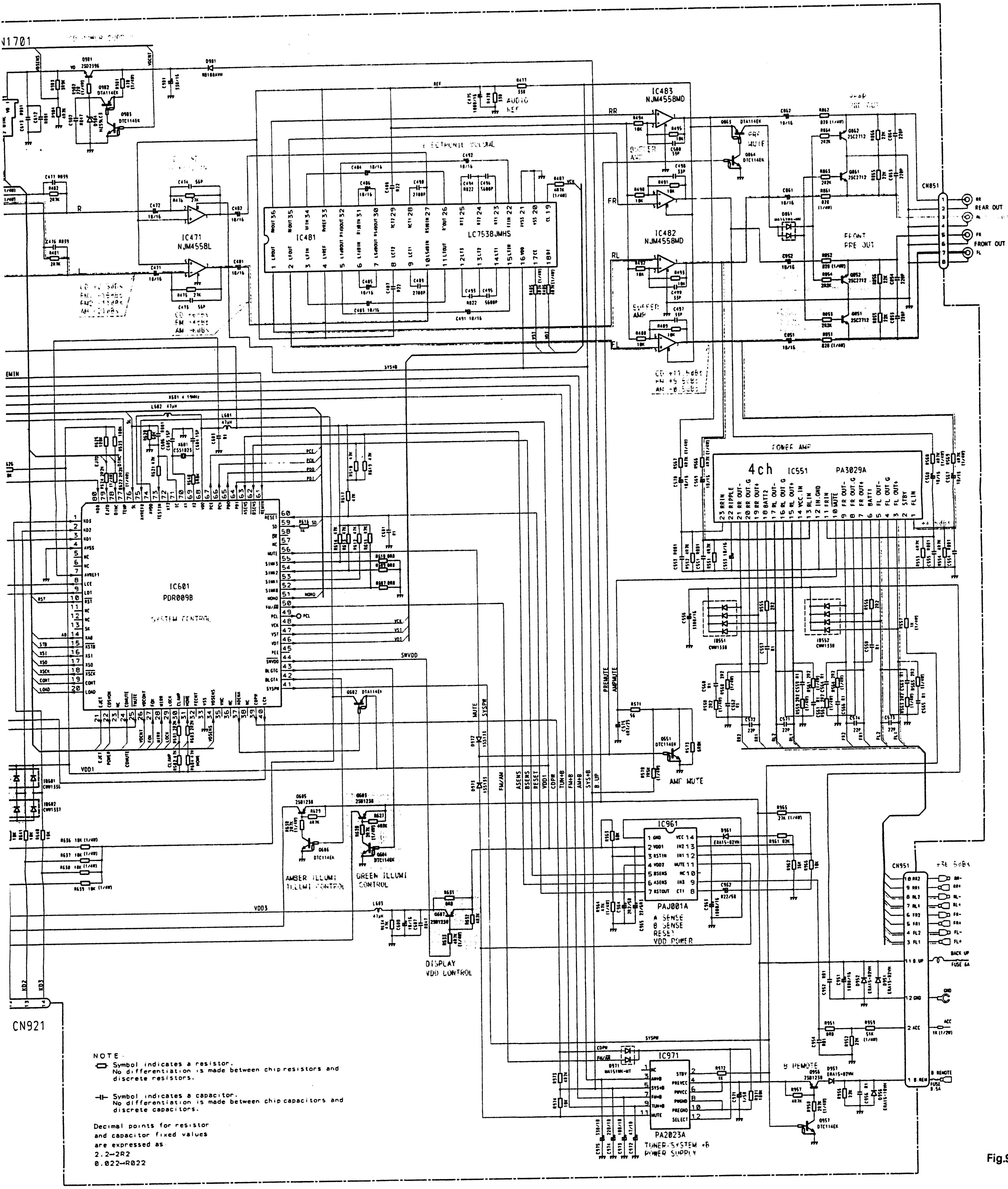
● Circuit Diagram

NOTE

-▭- Symbol indicates a resistor.
No differentiation is made between
discrete resistors.

-||- Symbol indicates a capacitor.
No differentiation is made between
discrete capacitors.

Decimal points for resistor
and capacitor fixed values
are expressed as
2.2→2R2
0.022→R022


N1701
D981
RB100AVM
Q981
2SD2396
Q982
DTA114EK
Q983
DTC114EK
REF
R477
AUDIO REF
IC483
NJM4558MD
RR
BUFFER AMP
Q863
DTA114EK
Q864
DTC114EK
REAR MUTE
REAR PRE OUT
Q862
2SC2712
Q861
2SC2712
CN851
REAR OUT
RR
RL
FR
FRONT OUT
FL
FRONT PRE OUT
Q852
2SC2712
Q851
2SC2712
ELECTRONIC VOLUME
IC481
LC7538JMHS
IC471
NJM4558L
IC482
NJM4558MD
RL
FR
FL
BUFFER AMP
VCK
SYS+B
EMIN
X681 4.19MHz
L682 47μH
L681 47μH
X601
CSS1025
PCE
PCK
PDO
PDI
IC601
PDR009B
SYSTEM CONTROL
RST
STB
XSI
XSO
XSCK
CONT
LOAD
VDD1
VDD3
MONO
PCL
VCK
VSI
VDI
SWVDD
Q682
DTA114EK
MUTE
SYSPW
FM/AM
ASENS
BSENS
RESET
VDD1
CDPW
TUN+B
AM+B
SYS+B
B UP
PREMUTE
AMPMUTE
POWER AMP
4ch
IC551
PA3029A
IB551
CWM1558
IB552
CWM1558
Q551
DTC114EK
AMP MUTE
Q605
2SB1238
Q606
DTC114EK
AMBER ILLUMI
ILLUMI CONTROL
Q603
2SB1238
Q604
DTC114EK
GREEN ILLUMI
CONTROL
L603
47μH
Q607
2SB1238
DISPLAY
VDD CONTROL
IC961
PAJ001A
A SENSE
B SENSE
RESET
VDD POWER
D961
ERA15-02VM
R965
27K (1/4W)
CN951
BACK UP
FUSE 6A
GND
ACC
B REMOTE
FUSE 0.5A
D952
ERA15-02VM
D951
ERA15-02VM
SYSPW
CDPW
FM/AM
D971
MA151WK-HT
IC971
PA2023A
TUNER·SYSTEM +B
POWER SUPPLY
B REMOTE
Q956
2SB1238
Q957
DTC114EK
D957
ERA15-02VM
IB601
CWM1556
IB602
CWM1557
KD2
KD3
CN921
Fig.S

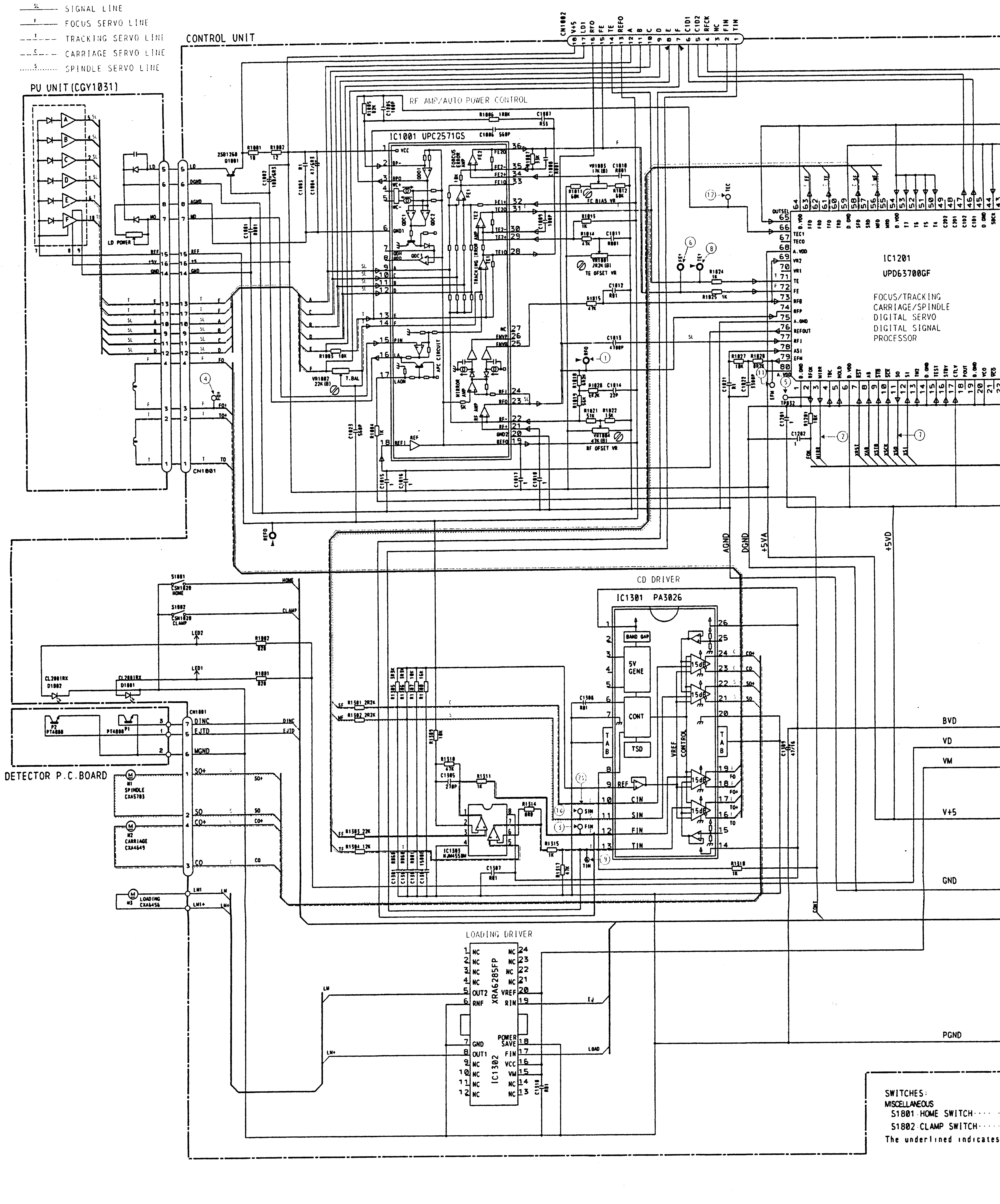
NOTE

⊏⊐ Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.

⊣⊢ Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

● Circuit Diagram

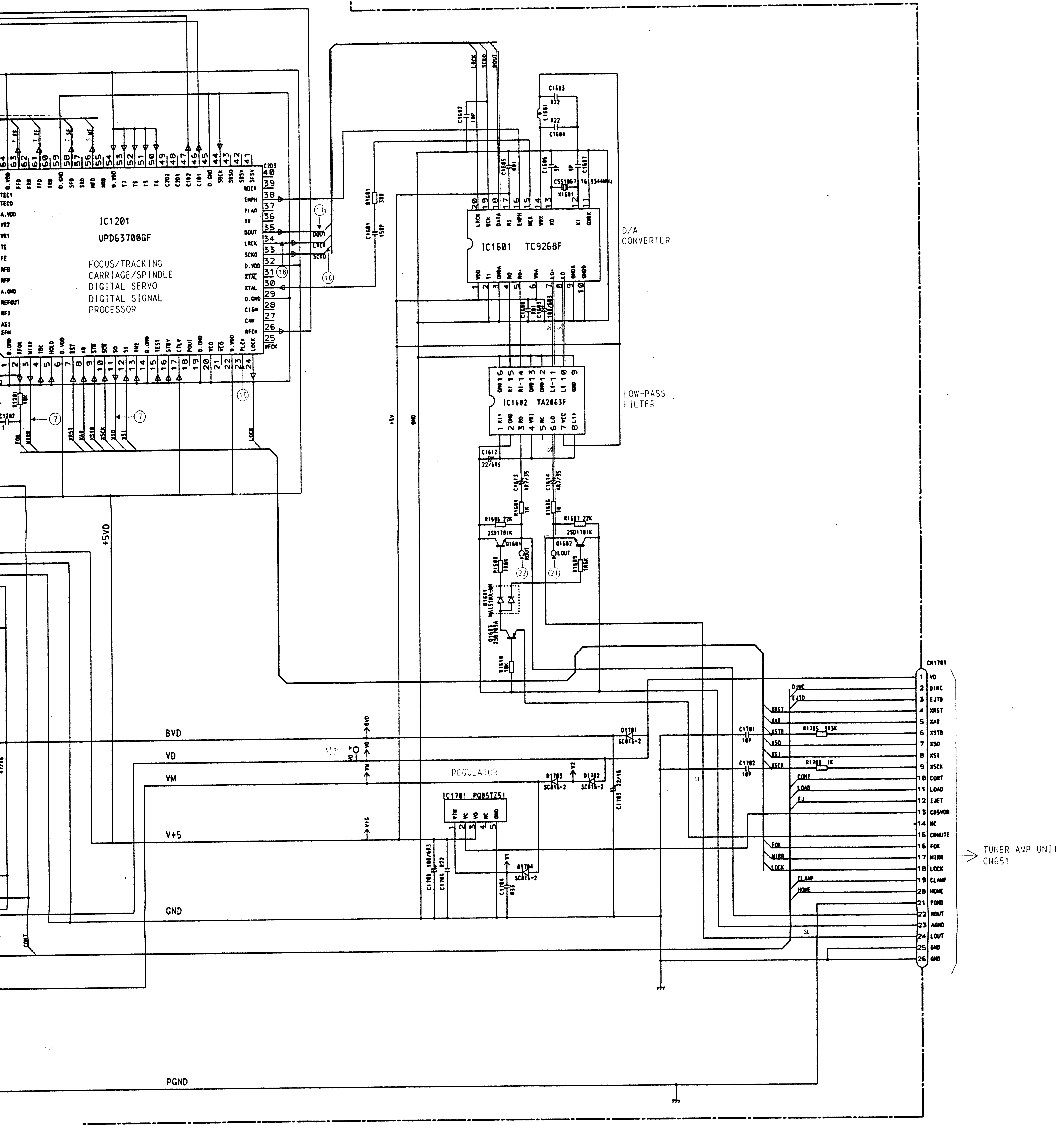

SL SIGNAL LINE
F FOCUS SERVO LINE
T TRACKING SERVO LINE
C CARRIAGE SERVO LINE
S SPINDLE SERVO LINE
CONTROL UNIT
PU UNIT (CGY1031)
LD POWER
CN1001
RF AMP/AUTO POWER CONTROL
IC1001 UPC2571GS
FOCUS ERROR AMP
TRACKING ERROR AMP
MIRROR AMP
APC CIRCUIT
RF AMP
T.BAL
VR1002 22K (B)
FC BIAS VR
TE OFSET VR
RF OFSET VR
CN1002
V+5
LD1
RFO
FE
TE
REFO
A
B
C
D
E
F
CID1
CID2
RFCK
NC
FIN
TIN
IC1201
UPD63700GF
FOCUS/TRACKING
CARRIAGE/SPINDLE
DIGITAL SERVO
DIGITAL SIGNAL
PROCESSOR
AGND
DGND
+5VA
+5VD
CD DRIVER
IC1301 PA3026
BAND GAP
5V GENE
CONT
TSD
VREF CONTROL
TAB
IC1303 NJM4558M
S1801 CSN1020 HOME
S1802 CSN1020 CLAMP
LED2
LED1
CL2001RX D1802
CL2001RX D1801
P2 PT4800
P1 PT4800
CN1801
DINC
EJTD
MGND
DETECTOR P.C.BOARD
M1 SPINDLE CXA5703
M2 CARRIAGE CXA4649
M3 LOADING CXA6456
SO+
SO
CO+
CO
LM1
LM1+
LOADING DRIVER
IC1302 XRA6285FP
OUT2
RNF
GND
OUT1
VREF
RIN
POWER SAVE
FIN
VCC
VM
BVD
VD
VM
V+5
GND
PGND

SWITCHES:
MISCELLANEOUS
S1801 HOME SWITCH······
S1802 CLAMP SWITCH······
The underlined indicates

NOTE:
–▭– Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.

–||– Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

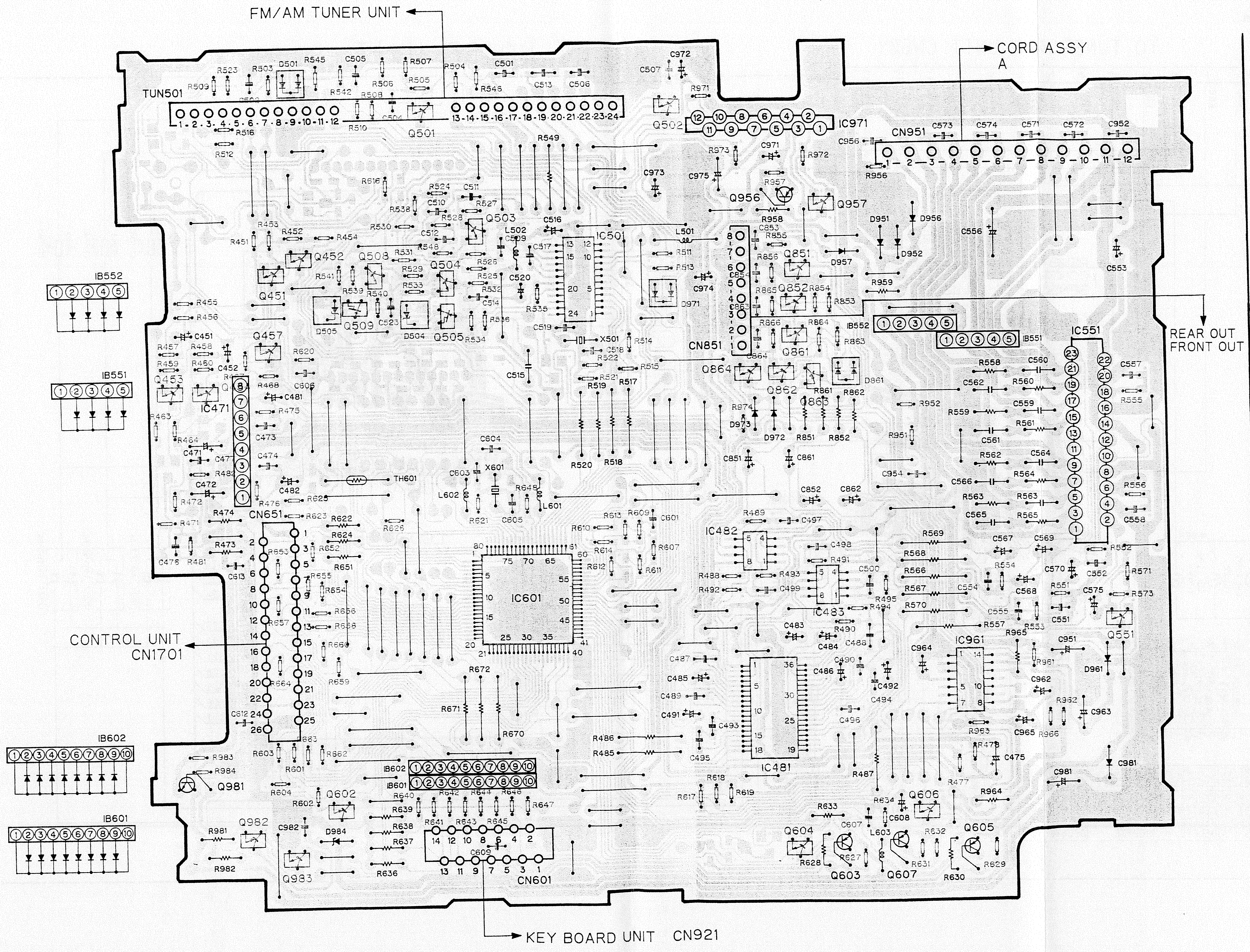
Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022


IC1201
UPD63700GF
FOCUS/TRACKING
CARRIAGE/SPINDLE
DIGITAL SERVO
DIGITAL SIGNAL
PROCESSOR
IC1601 TC9268F
D/A
CONVERTER
IC1602 TA2063F
LOW-PASS
FILTER
X1601 CSS1067 16.9344MHz
Q1601 2SD1781K
Q1602 2SD1781K
ROUT
LOUT
REGULATOR
IC1701 PQ05TZ51
D1701 SC016-2
D1702 SC016-2
D1703 SC016-2
D1704 SC016-2
BVD
VD
VM
V+5
GND
PGND
+5VD
+5V
CN1701
1 VD
2 DINC
3 EJTD
4 XRST
5 XAB
6 XSTB
7 XSO
8 XSI
9 XSCK
10 CONT
11 LOAD
12 EJET
13 CDSVON
14 NC
15 CDMUTE
16 FOK
17 MIRR
18 LOCK
19 CLAMP
20 HOME
21 PGND
22 ROUT
23 AGND
24 LOUT
25 GND
26 GND
TUNER AMP UNIT
CN651

SWITCHES:
MISCELLANEOUS
S1801 HOME SWITCH··········ON-OFF
S1802 CLAMP SWITCH··········ON-OFF
The underlined indicates the switch position.

Fig.8

● Connection Diagram


FM/AM TUNER UNIT
CORD ASSY A
REAR OUT
FRONT OUT
CONTROL UNIT CN1701
KEY BOARD UNIT CN921
TUN501
IB552
IB551
IB602
IB601
IC971
CN951
IC501
CN851
IC551
IC471
CN651
IC601
IC482
IC483
IC481
IC961
CN601
Q501
Q502
Q503
Q504
Q505
Q508
Q509
Q452
Q453
Q457
Q851
Q852
Q861
Q862
Q863
Q864
Q956
Q957
Q551
Q602
Q603
Q604
Q605
Q606
Q607
Q981
Q982
Q983
X601
X501
TH601
L501
L502
L601
L602
L603
D501
D504
D505
D951
D952
D956
D957
D961
D971
D972
D973
D984
D861

IC, Q

Q501 Q502

IC971

Q956 Q957

Q503

Q452 IC501

Q451 Q508

Q504 Q851

Q509 Q505 Q852

Q861

Q457

Q864 Q862 Q863

Q453 Q454

IC471 IC551

IC482

IC601 IC483

Q551

IC961

IC481

Q981

Q602 Q606

Q982

Q983 Q604

Q603 Q607 Q605

A

B

C

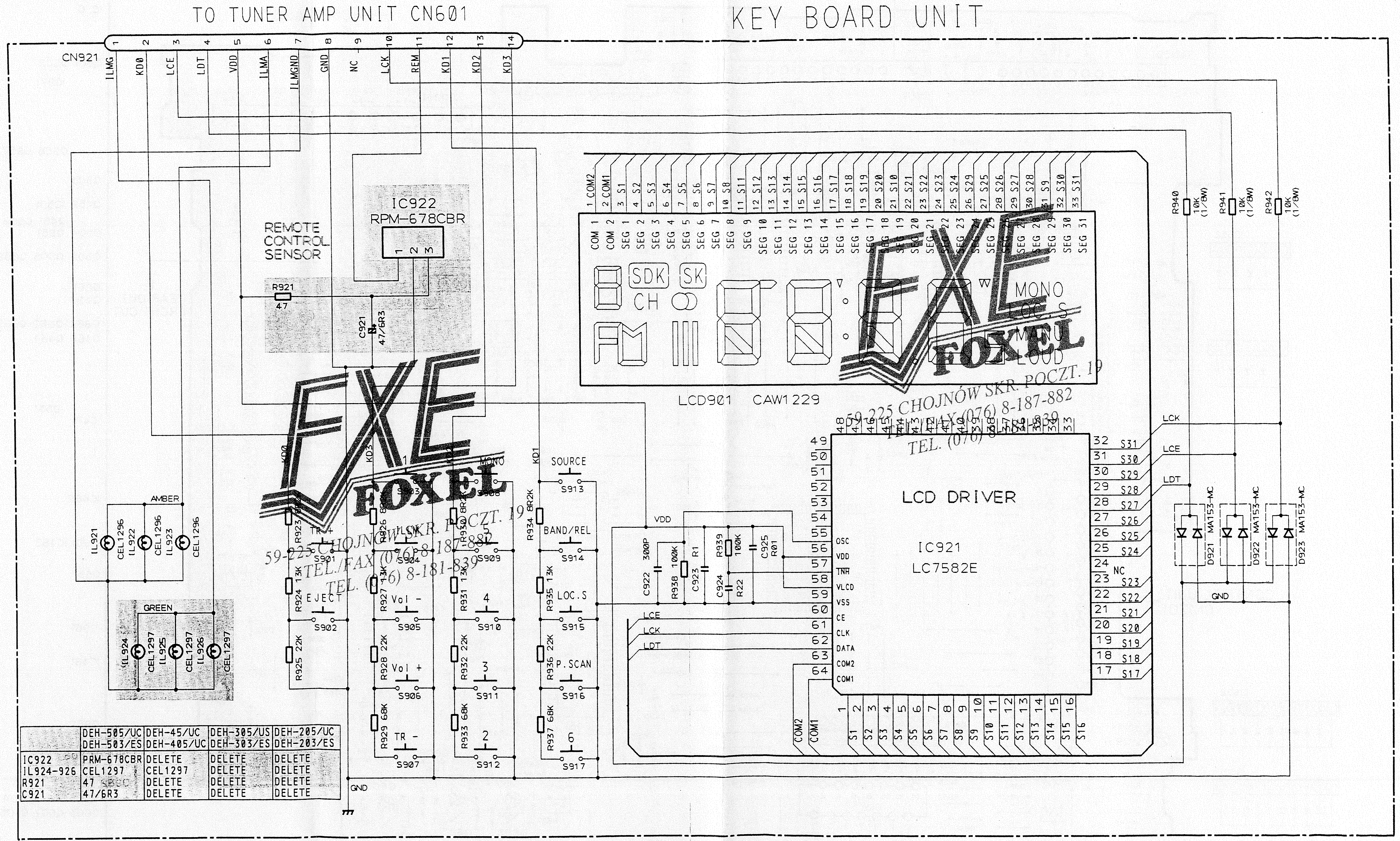
D

Fig.10

1 2 3 4 5 6

3.3 KEY BOARD UNIT

- **Circuit Diagram**


TO TUNER AMP UNIT CN601
KEY BOARD UNIT
CN921
1 ILMG
2 KD0
3 LCE
4 LDT
5 VDD
6 ILMA
7 ILMGND
8 GND
9 NC
10 LCK
11 REM
12 KD1
13 KD2
14 KD3
IC922
RPM-678CBR
REMOTE CONTROL SENSOR
1 2 3
R921
47
C921
47/6R3
AMBER
IL921
CEL1296
IL922
CEL1296
IL923
CEL1296
GREEN
IL924
CEL1297
IL925
CEL1297
IL926
CEL1297
KD0
KD3
KD2
KD1
R923
TR +
S901
R924 13K
EJECT
S902
R925 22K
R926 8R2K
CLOCK
S903
S904
R927 13K
Vol -
S905
R928 22K
Vol +
S906
R929 68K
TR -
S907
R930 8R2K
MONO
S908
S909
R931 13K
4
S910
R932 22K
3
S911
R933 68K
2
S912
R934 8R2K
SOURCE
S913
BAND/REL
S914
R935 13K
LOC.S
S915
R936 22K
P.SCAN
S916
R937 68K
6
S917
GND
COM 1
COM 2
SEG 1 … SEG 31
SDK
SK
CH
MONO
LOC S
MANU
LOUD
LCD901 CAW1229
LCD DRIVER
IC921
LC7582E
OSC
VDD
INH
VLCD
VSS
CE
CLK
DATA
COM2
COM1
VDD
C922 300P
R938 100K
R1
C923
R939 100K
C924
R22
C925
R01
LCE
LCK
LDT
S1 … S31
NC
R940 10K (1/8W)
R941 10K (1/8W)
R942 10K (1/8W)
D921 MA153-MC
D922 MA153-MC
D923 MA153-MC
GND
A
B
C
D
1 2 3 4 5 6

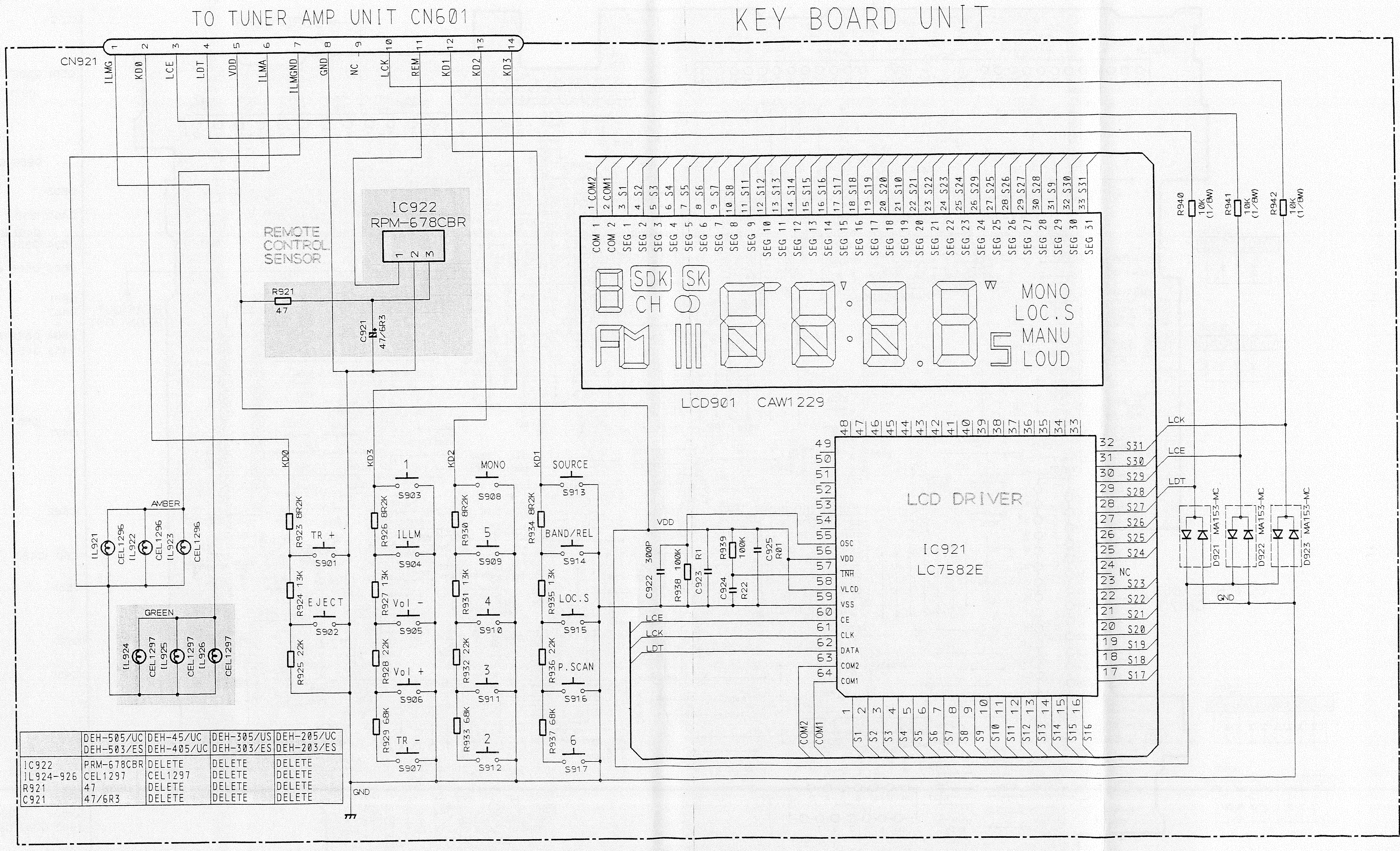
	DEH-505/UC DEH-503/ES	DEH-45/UC DEH-405/UC	DEH-305/US DEH-303/ES	DEH-205/UC DEH-203/ES
IC922	PRM-678CBR	DELETE	DELETE	DELETE
IL924-926	CEL1297	CEL1297	DELETE	DELETE
R921	47	DELETE	DELETE	DELETE
C921	47/6R3	DELETE	DELETE	DELETE

Fig.11

FXE FOXEL 59-225 CHOJNÓW SKR. POCZT. 19 TEL./FAX (076) 8-187-882 TEL. (076) 8-181-839

3.3 KEY BOARD UNIT

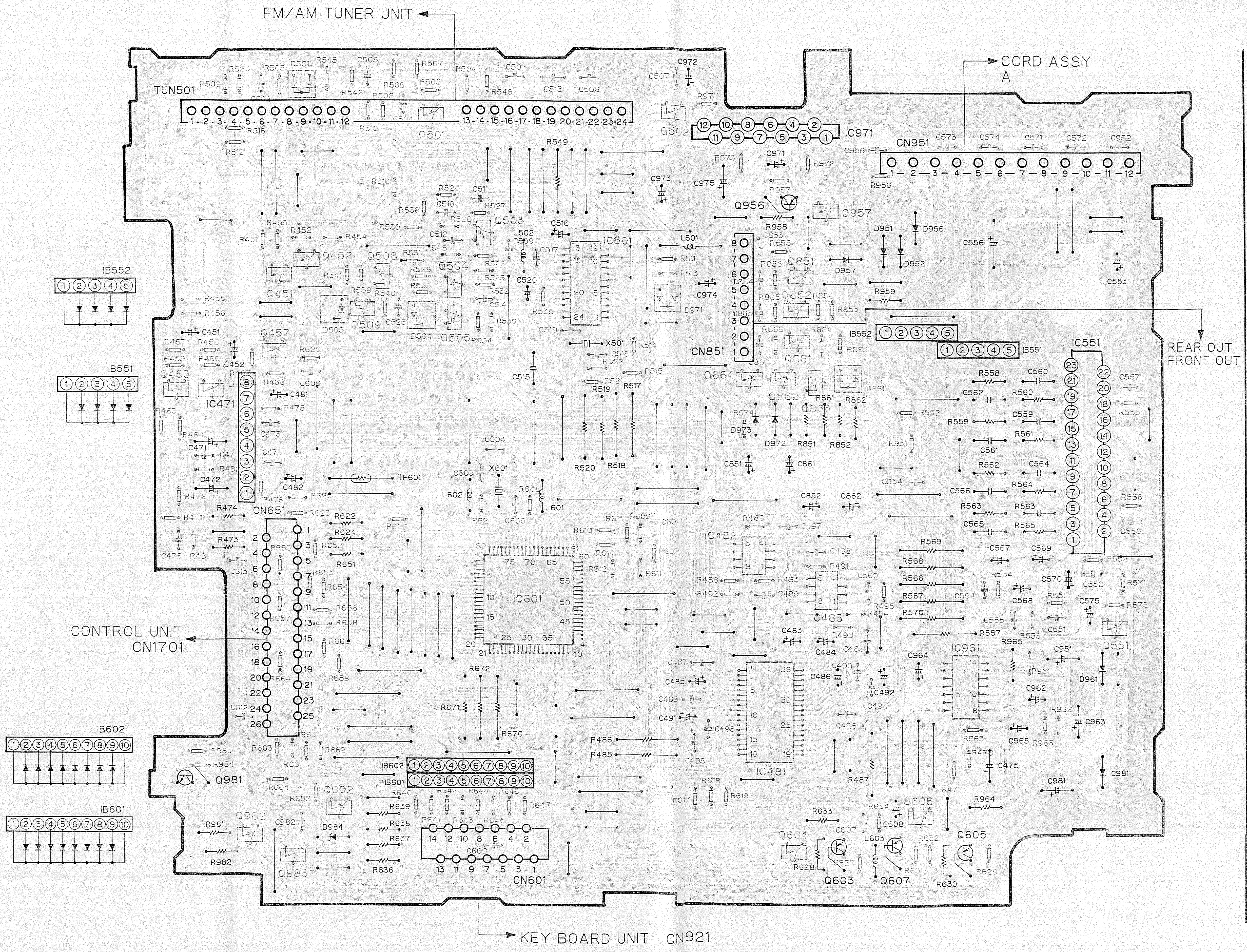
● Circuit Diagram


TO TUNER AMP UNIT CN601
KEY BOARD UNIT
CN921
ILMG
KD0
LCE
LDT
VDD
ILMA
ILMGND
GND
NC
LCK
REM
KD1
KD2
KD3
IC922
RPM-678CBR
REMOTE CONTROL SENSOR
R921
47
C921
47/6R3
LCD901 CAW1229
COM 1
COM 2
SEG 1 … SEG 31
SDK
SK
CH
MONO
LOC.S
MANU
LOUD
LCD DRIVER
IC921
LC7582E
OSC
VDD
INH
VLCD
VSS
CE
CLK
DATA
COM2
COM1
NC
C922 300P
R938 100K
R1
C923
C924
R939 100K
R22
C925 R01
R940 10K (1/8W)
R941 10K (1/8W)
R942 10K (1/8W)
D921 MA153-MC
D922 MA153-MC
D923 MA153-MC
AMBER
GREEN
IL921
IL922
IL923
CEL1296
IL924
IL925
IL926
CEL1297
R923 8R2K
R924 13K
R925 22K
R926 8R2K
R927 13K
R928 22K
R929 68K
R930 8R2K
R931 13K
R932 22K
R933 68K
R934 8R2K
R935 13K
R936 22K
R937 68K
TR +
S901
EJECT
S902
1
S903
ILLM
S904
Vol -
S905
Vol +
S906
TR -
S907
MONO
S908
5
S909
4
S910
3
S911
2
S912
SOURCE
S913
BAND/REL
S914
LOC.S
S915
P.SCAN
S916
6
S917
GND

	DEH-505/UC DEH-503/ES	DEH-45/UC DEH-405/UC	DEH-305/US DEH-303/ES	DEH-205/UC DEH-203/ES
IC922	PRM-678CBR	DELETE	DELETE	DELETE
IL924-926	CEL1297	CEL1297	DELETE	DELETE
R921	47	DELETE	DELETE	DELETE
C921	47/6R3	DELETE	DELETE	DELETE

Fig.11

Connection Diagram


FM/AM TUNER UNIT
TUN501
Q501
Q502
IC971
CN951
CORD ASSY A
Q956
Q957
IC501
Q503
Q452
Q508
Q504
Q451
Q509
Q505
Q457
Q453
IC471
CN851
Q851
Q852
Q861
Q864
Q862
Q863
IB552
IB551
IC551
REAR OUT
FRONT OUT
TH601
X601
X501
CN651
IC601
IC482
IC483
IC481
IC961
Q551
CONTROL UNIT
CN1701
IB602
IB601
Q981
Q602
Q606
Q982
Q983
Q604
Q603
Q607
Q605
CN601
KEY BOARD UNIT CN921

IC, Q

A

Q501 Q502
IC971

Q956 Q957

Q503
Q452 IC501
Q451 Q508
Q504 Q851
Q509 Q505 Q852

B

Q861
Q457
Q864 Q862 Q863
Q453 Q454

IC551
IC471

IC482

C

IC601 IC483
Q551

IC961
IC481

Q981
Q602 Q606
Q982

D

Q983 Q604
Q603 Q607 Q605

Fig.10

1 2 3 4 5 6

● Connection Diagram

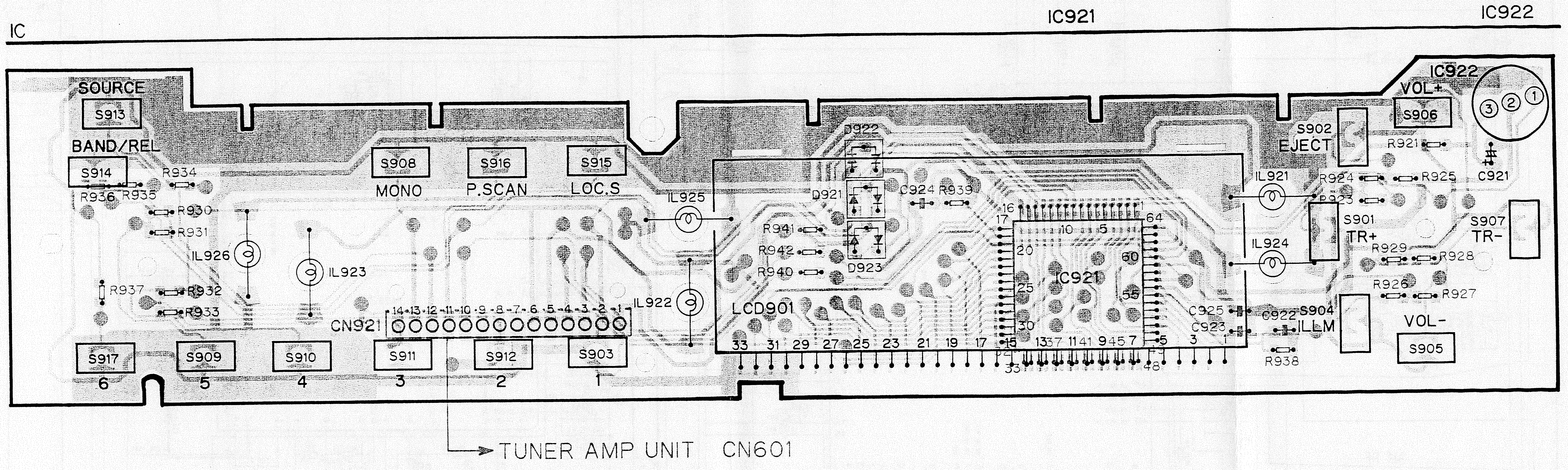

IC
IC921
IC922
SOURCE
S913
BAND/REL
S914
R934
R936
R935
R930
R931
IL926
IL923
R937
R932
R933
S908
MONO
S916
P.SCAN
S915
LOC.S
IL925
IL922
CN921
14 13 12 11 10 9 8 7 6 5 4 3 2 1
S917
6
S909
5
S910
4
S911
3
S912
2
S903
1
TUNER AMP UNIT CN601
D922
D921
D923
R941
R942
R940
C924
R939
LCD901
IC921
16
17
20
25
30
64
60
55
10
5
33
31
29
27
25
23
21
19
17
15
13
37
11
41
9
45
7
3
48
IL921
IL924
S902
EJECT
IC922
VOL+
S906
③ ② ①
R921
C921
R924
R925
R923
S901
TR+
S907
TR-
R929
R928
R926
R927
C925
C923
C922
S904
ILLM
R938
VOL-
S905

Fig.12

3.4 FM/AM TUNER UNIT

● Circuit Diagram

NOTE :

⊏⊐ Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.

⊣⊢ Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

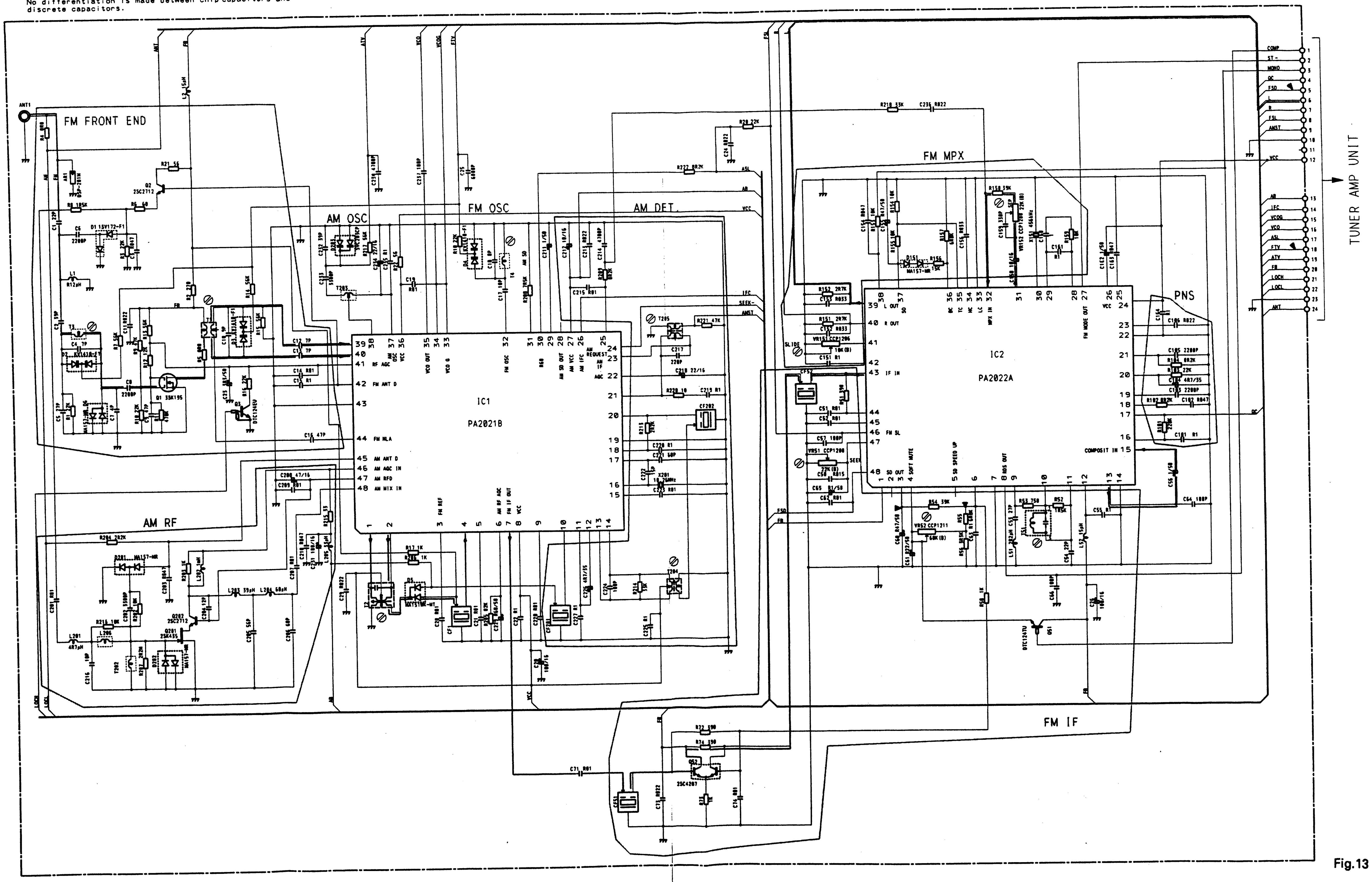

ANT1
FM FRONT END
AM OSC
FM OSC
AM DET.
FM MPX
PNS
IC1
PA2021B
IC2
PA2022A
AM RF
FM IF
TUNER AMP UNIT
COMP
ST-
MONO
QC
FSD
FSL
AMST
VCC
AR
IFC
VCOG
VCO
ASL
FTV
ATV
FR
LOCH
LOCL
ANT
SLIDE
SEEK
Q1 3SK195
Q2 2SC2712
Q3 DTC124EU
Q51 DTC124TU
Q52 2SC4207
Q201 2SK435
Q202 2SC2712

Fig.13

● Connection Diagram

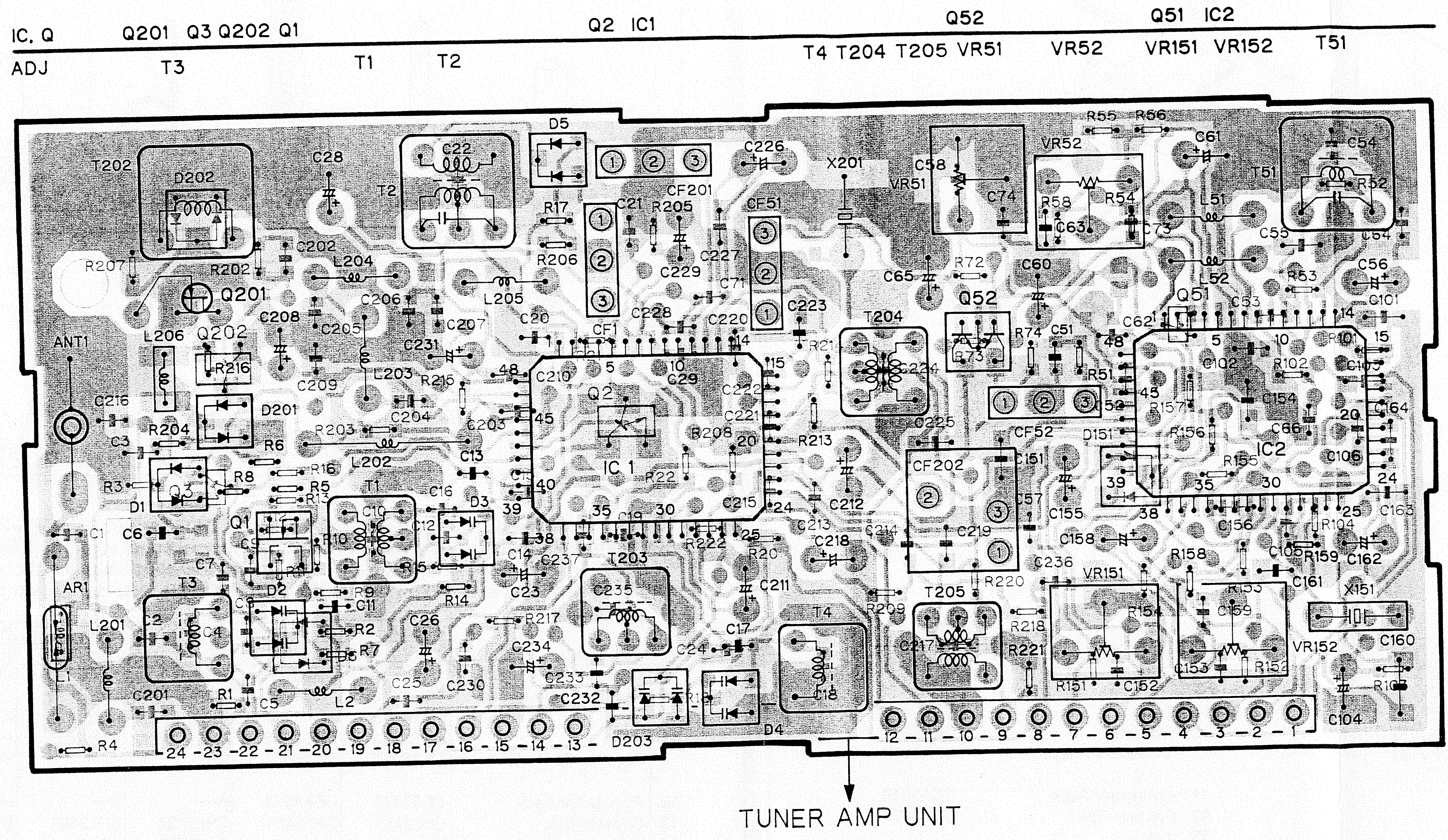

IC, Q
ADJ
Q201
Q3
Q202
Q1
T3
T1
T2
Q2
IC1
Q52
T4
T204
T205
VR51
VR52
Q51
IC2
VR151
VR152
T51
TUNER AMP UNIT

Fig.14

4. PACKING METHOD

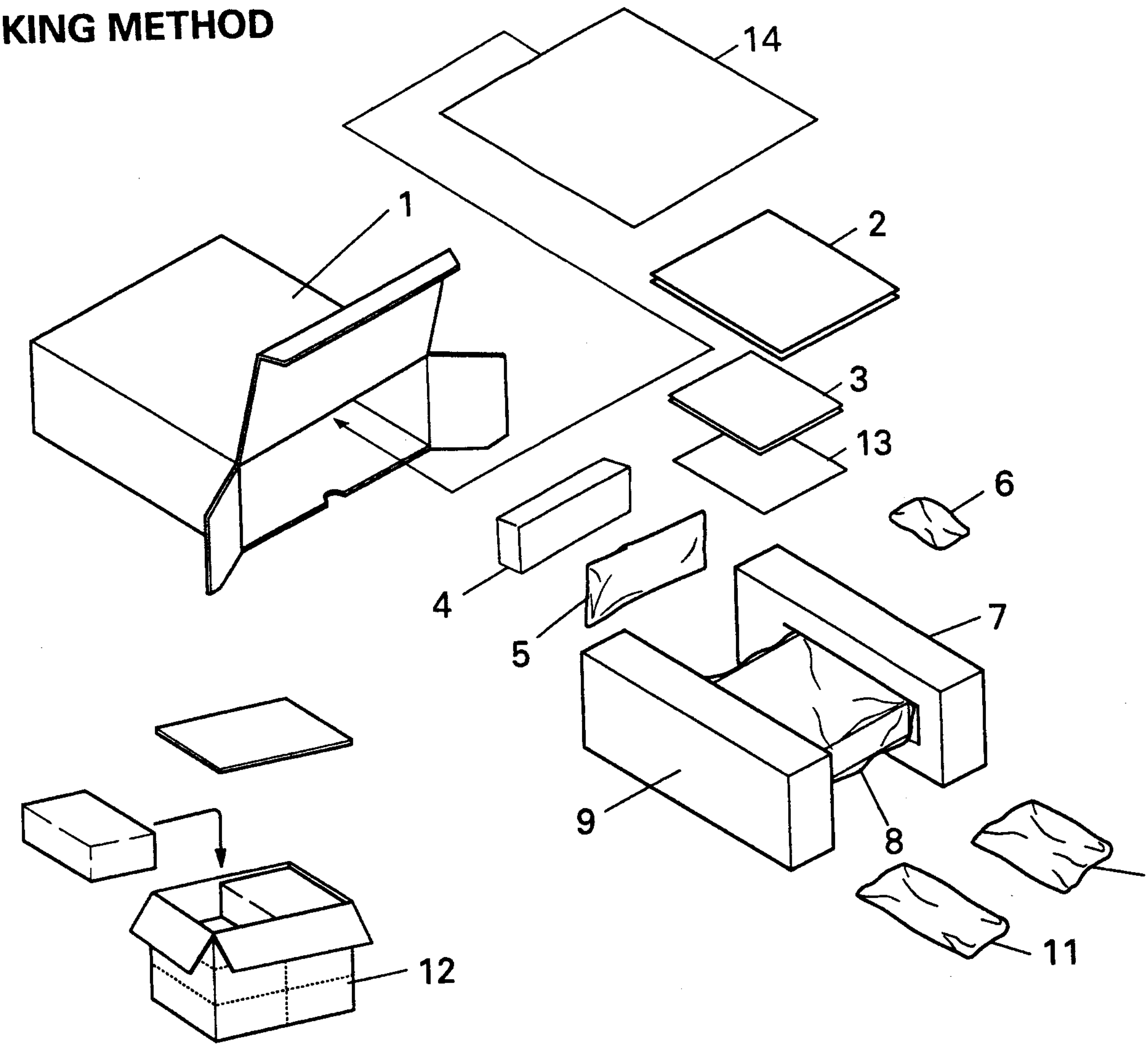

14
1
2
3
13
6
4
5
7
9
8
10
11
12

Fig.15

- **Parts List(DEH-505/UC)**

Mark	No.	Description	Part No.
	1	Carton	CHG2430
	2	Owner's Manual	CRD1724
*	3	Card	ARY1048
	4	Case	CNS2269
	5	Cord Assy	CDE4143

*: Non Spare Part

Mark	No.	Description	Part No.
	6	Remote Control Assy	CXA6155
	7	Protector	CHP1603
	8	Cover	CEG1092
	9	Protector	CHP1602
	10	Accessory Assy	CEA1473
	11	Accessory Assy	CEA1918
	12	Contain Box	CHL2430
	13	•••••	
	14	Spacer	CHW1387

2 Owner's Manual

Model	Part No.	Language
DEH-505/UC,DEH-405/UC,DEH-205/UC	CRD1724	English,French,Spanish
DEH-503/ES,DEH-303/ES,DEH-203/ES	CRD1722	English,French,Spanish,Arabic
DEH-45/UC	CRD1739	English,French
DEH-305/US	CRB1327	English

- **Accessory Assy**

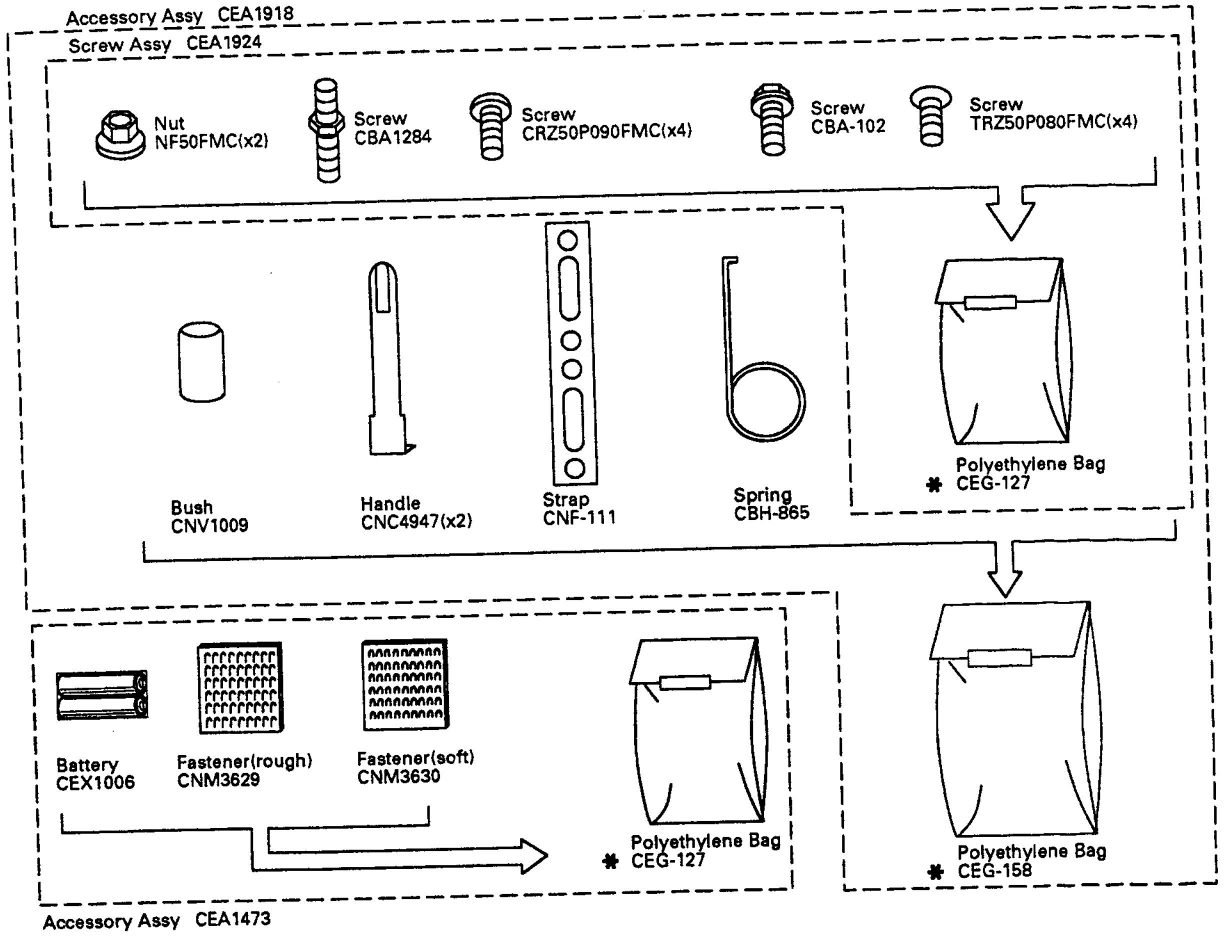

Accessory Assy CEA1918
Screw Assy CEA1924
Nut
NF50FMC(x2)
Screw
CBA1284
Screw
CRZ50P090FMC(x4)
Screw
CBA-102
Screw
TRZ50P080FMC(x4)
Bush
CNV1009
Handle
CNC4947(x2)
Strap
CNF-111
Spring
CBH-865
Polyethylene Bag
* CEG-127
Battery
CEX1006
Fastener(rough)
CNM3629
Fastener(soft)
CNM3630
Polyethylene Bag
* CEG-127
Polyethylene Bag
* CEG-158
Accessory Assy CEA1473

Fig.16

- **The DEH-503/ES, DEH-45/UC, DEH-405/UC, DEH-305/US, DEH-303/ES, DEH-205/UC and DEH-203/ES Parts Lists enumerate the parts which differ from those enumerated in the DEH-505/UC Parts List only. The parts other than those enumerated in the former are identical with those in the latter, to which you are requested to refer, accordingly. The DEH-505/UC Parts List is given on page 2-33.**

Mark	No.	Description	DEH-505/UC	DEH-503/ES	DEH-45/UC	DEH-405/UC	DEH-305/US	DEH-303/ES
			Part No.	Part No.	Part No.	Part No.	Part No.	Part No.
	1	Carton	CHG2430	CHG2431	CHG2424	CHG2421	CHG2423	CHG2422
	2	Owner's Manual	CRD1724	CRD1722	CRD1739	CRD1724	CRB1327	CRD1722
*	3	Card	ARY1048	•••••	•••••	ARY1048	ARY1048	•••••
	4	Case	CNS2269	CNS2269	CNS2269	CNS2269	•••••	•••••
	6	Remote Control Assy	CXA6155	CXA6155	•••••	•••••	•••••	•••••
	10	Accessory Assy	CEA1473	CEA1473	•••••	•••••	•••••	•••••
	12	Contain Box	CHL2430	CHL2431	CHL2424	CHL2421	CHL2423	CHL2422
*	13	Warranty Card	•••••	•••••	CRY1070	•••••	•••••	•••••

Mark	No.	Description	DEH-505/UC	DEH-205/UC	DEH-203/ES
			Part No.	Part No.	Part No.
	1	Carton	CHG2430	CHG2425	CHG2426
	2	Owner's Manual	CRD1724	CRD1724	CRD1722
*	3	Card	ARY1048	ARY1048	•••••
	4	Case	CNS2269	•••••	•••••
	6	Remote Control Assy	CXA6155	•••••	•••••
	10	Accessory Assy	CEA1473	•••••	•••••
	12	Contain Box	CHL2430	CHL2425	CHL2426